CryptoServer LAN V5

License Texts

utimaco®

Imprint

copyright 2018	Utimaco IS GmbH Germanusstrasse 4 D-52080 Aachen Germany
phone	+49 (0)241 / 1696-200
fax	+49 (0)241 / 1696-199
web	http://hsm.utimaco.com
email	support-cs@utimaco.com
document version	
date	September 2018
author	Utimaco HSM R&D
document no.	2013-0005

all rights reserved	No part of this documentation may be reproduced in any form (printing, photocopy or according to any other process) without the written approval of Utimaco IS GmbH or be processed, reproduced or distributed using electronic systems. Utimaco IS GmbH reserves the right to modify or amend the documentation at any time without prior notice. Utimaco IS GmbH assumes no liability for typographical errors and damages incurred due to them. All trademarks and registered trademarks are the property of their respective owners.

Contents

1 Introduction **7**

2 License Table **7**

3 License Texts **12**

3.1 acl . . . 12
3.2 attr . . . 30
3.3 aufs4-standalone . . . 48
3.4 autoconf . . . 54
3.5 automake . . . 73
3.6 bash . . . 94
3.7 bc . . . 125
3.8 binutils . . . 140
3.9 bison . . . 250
3.10 busybox . . . 262
3.11 bzip2 . . . 279
3.12 check . . . 280
3.13 cmake . . . 290
3.14 coreutils . . . 318
3.15 curl . . . 388
3.16 dejagnu . . . 391
3.17 dhcp . . . 403
3.18 dialog . . . 404
3.19 diffutils . . . 415
3.20 dos2unix . . . 427
3.21 e2fsprogs . . . 428
3.22 elfutils . . . 441
3.23 ethtool . . . 462
3.24 eudev . . . 468
3.25 expat . . . 474
3.26 expect . . . 475

3.27 fcron . . . 476
3.28 file . . . 477
3.29 findutils . . . 478
3.30 flex . . . 490
3.31 gawk . . . 491
3.32 gcc . . . 523
3.33 gdb . . . 816
3.34 gdbm . . . 969
3.35 gettext . . . 981
3.36 glibc . . . 1019
3.37 gmp . . . 1047
3.38 gperf . . . 1184
3.39 grep . . . 1196
3.40 groff . . . 1208
3.41 grub . . . 1224
3.42 gzip . . . 1237
3.43 iana-etc . . . 1249
3.44 inetutils . . . 1250
3.45 ipmitool . . . 1262
3.46 iproute2 . . . 1263
3.47 iptables . . . 1269
3.48 kbd . . . 1275
3.49 kmod . . . 1277
3.50 less . . . 1310
3.51 lfs-bootscripts . . . 1323
3.52 libarchive . . . 1324
3.53 libcap . . . 1326
3.54 libftdi1 . . . 1334
3.55 libpcap . . . 1350
3.56 libtool . . . 1351
3.57 libusb . . . 1366
3.58 libuv . . . 1375
3.59 linux . . . 1385

3.60 logrotate 1604
3.61 m4 1610
3.62 make 1622
3.63 meinberg 1654
3.64 mpc 1655
3.65 mpfr 1661
3.66 ncurses 1677
3.67 net-snmp 1689
3.68 net-tools 1696
3.69 ntp 1702
3.70 openipmi 1730
3.71 openssh 1746
3.72 openssl 1752
3.73 patch 1762
3.74 pciutils 1777
3.75 perl 1783
3.76 pkg-config 1814
3.77 popt 1829
3.78 procps-ng 1830
3.79 psmisc 1845
3.80 readline 1851
3.81 screen 1863
3.82 sed 1875
3.83 shadow 1888
3.84 sysklogd 1905
3.85 sysvinit 1911
3.86 tar 1918
3.87 tcl 1930
3.88 tcpdump 1943
3.89 texinfo 1944
3.90 tzdata 2000
3.91 udev-lfs 2001
3.92 util-linux 2002

3.93 vim 2026
3.94 xz 2027
3.95 zlib 2055

1 Introduction

The following copyright statements and licenses apply to various 3rd party and open source software components that are distributed with the CryptoServer LAN Linux Distribution. The CryptoServer LAN Linux distribution package that includes this file does not necessarily use all the open source software components referred to below.

2 License Table

Packet	Version	Licenses	Used in		
			Toolchain	Build	Distribution
acl	2.2.52	LGPLv2.1, GPLv2		•	partially
attr	2.4.47.src	LGPLv2.1, GPLv2		•	partially
aufs4-standalone	4.15	GPLv2		•	•
autoconf	2.69	GPLv2, GPLv3, Autoconf Configure Exception v3.0	•	•	
automake	1.15.1	GPLv2, GPLv3	•	•	
bash	4.4.18	GPLv3	•	•	partially
bc	1.07.1	GPLv2, LGPLv2.1	•	•	
binutils	2.30	GPLv2, GPLv3, LibGPLv2, LGPLv2.1, LGPLv3	•	•	partially
bison	3.0.4	GPLv3	•	•	
busybox	1.28.3	GPLv2, LGPLv2.1, bzip2		•	•
bzip2	1.0.6	bzip2	•	•	partially
check	0.12.0	LGPLv2.1	•	•	
cmake	3.10.2	BSD modified, LGPLv2.1, LGPLv3, Apache License V2.0, ISC	•	•	
coreutils	8.29	GPLv3	•	•	partially
curl	7.58.0	MIT, ISC		•	•
dejagnu	1.6.1	GPLv3	•	•	
dhcp	4.4.0	ISC		•	partially

dialog	1.2_20150920	LGPLv2.1		•	partially
diffutils	3.6	GPLv3	•	•	•
dos2unix	7.4.0	BSD 2-clause		•	•
e2fsprogs	1.43.9	GPLv2, LibGPLv2, BSD-style, MIT-style, LGPLv2.1		•	partially
elfutils	0.170	GPLv2, GPLv3, LGPLv3		•	•
ethtool	4.15	GPLv2		•	•
eudev	3.2.5	GPLv2		•	•
expat	2.2.5	MIT		•	partially
expect	5.45	expect, public domain	•	•	
fcron	3.2.0	LICTYPE =GPLv2++		•	•
file	5.32	BSD Simplified	•	•	•
findutils	4.6.0	GPLv3	•	•	•
flex	2.6.4	BSD style	•	•	partially
gawk	4.2.0	GPLv2, GPLv3+, LibGPLv2	•	•	partially
gcc	7.3.0	GPLv3, GPLv2, LGPLv2.1, LGPLv3, GCC Runtime Library Exception 3.1, Boost Software License v1.0, MIT, BSD-style, ISC BSD-modified	•	•	partially
gdb	8.1	GPLv3, GPLv2, BSD-style, LGPLv2, LGPLv2.1, LGPLv3		•	
gdbm	1.14.1	GPLv3		•	•
gettext	0.19.8.1	GPLv3, LGPLv2.1, MIT	•	•	•
glibc	2.27	GPLv2, GPLv3, LGPLv2.1, LGPLv3, SunPro Attribution License, BSD Intel License, Henry Spencer Regexp, zlib	•	•	partially
gmp	6.1.2	GPLv2, GPLv3, LGPLv3	•	•	•
gperf	3.1	GPLv3		•	•

grep	3.1	GPLv3	•	•	•
groff	1.22.3	GPLv3, Public Domain	•	•	
grub	2.02	GPLv3, Unicode, Creative Commons BY-SA 3.0		•	partially
gzip	1.9	GPLv3	•	•	•
iana-etc	2.30	OSLv3.0		•	•
inetutils	1.9.4	GPLv3		•	•
ipmitool	1.8.18	BSD 3-clause		•	•
iproute2	4.15.0	GPLv2		•	•
iptables	1.6.2	GPLv2		•	•
kbd	2.0.4	GPLv2		•	•
kmod	25	GPLv2, LGPLv2.1		•	•
less	530	BSD 2-clause, GPLv3		•	•
lfs-bootscripts	20170626	MIT			partially
libarchive	3.3.2	BSD 2-clause, Public Domain		•	•
libcap	2.25	BSD 3-clause, GPLv2		•	•
libftdi1	1-1.4	BSD 3-clause, LGPLv2, GPLv2		•	partially
libpcap	1.8.1	BSD 3-clause		•	partially
libtool	2.4.6	GPLv2, LGPLv2.1		•	partially
libusb	1.0.21	LGPLv2.1		•	•
libuv	1.19.1	Creative Commons, BSD 2-clause, BSD 3-clause, ISC		•	•
linux	4.15.3	GPLv2, LibGPLv2		•	•
logrotate	3.11.0	GPLv2		•	•
m4	1.4.18	GPLv3	•	•	
make	4.2.1	GPLv3, LibGPLv2	•	•	
meinberg	4.0.2	GPLv2. Meinberg		•	•
mpc	1.1.0	LGPLv3	•	•	•
mpfr	4.0.1	LGPLv3, GPLv3		•	•
ncurses	6.1	MIT/X11, BSD 3-clause	•	•	partially
net-snmp	5.7.3	BSD-style, BSD 3-clause		•	•

net-tools	CVS_20101030	GPLv2		•	•
ntp	4.2.8p10	BSD Modified, GPLv3, LGPLv3		•	partially
openipmi	2.0.24	LGPLv2.1, GPLv2, BSD 3-clause		•	•
openssh	7.6p1	BSD 3-clause, BSD 2-clause, ISC, MIT		•	•
openssl	1.1.0g	OpenSSL, Original SSLeay, GPLv2		•	partially
patch	2.7.6	GPLv3	•	•	•
pciutils	3.5.6	GPLv2		•	partially
perl	5.26.1	GPLv1++, The Artistic License, BSD	•	•	
pkg-config	0.29.2	GPLv2, LibGPLv2		•	
popt	1.16	MIT		•	•
procps-ng	3.3.12	LibGPLv2, GPLv2		•	•
psmisc	23.1	GPLv2		•	•
readline	7.0	GPLv3		•	•
screen	4.6.2	GPLv3		•	•
sed	4.4	GPLv3	•	•	•
shadow	4.5	BSD 3-clause, The Artistic License		•	partially
sysklogd	1.5.1	GPLv2		•	•
sysvinit	2.88dsf	GPLv2		•	•
tar	1.30	GPLv3	•	•	•
tcl	8.6.8	BSD, MIT, Boost Software License v1.0	•	•	
tcpdump	4.9.2	BSD 3-clause		•	•
texinfo	6.5	GPLv3.LGPLv2.1	•	•	
tzdata	2018c	Public Domain, BSD 3-clause			partially
udev-lfs	20171102	GPLv2		•	•
util-linux	2.31.1	GPLv2, LGPLv2.1, BSD Original UC, BSD Modified (libuuid)		•	partially

vim	8.0.586	MIT		•	•
xz	5.2.3	LGPLv2.1, GPLv2, GPLv3, Public Domain	•	•	partially
zlib	1.2.11	zlib, Boost Software License v1.0		•	partially

3 License Texts

3.1 acl

```
acl
------------------------------------------------------------------
acl/debian/copyright
------------------------------------------------------------------
This package was debianized by Nathan Scott nathans@debian.org on
Tue, 26 Feb 2002 13:25:26 +1100

It can be downloaded from ftp://acl.bestbits.at/

Copyright:

Copyright (C) 2001 Andreas Gruenbacher.
Copyright (C) 2001-2002 Silicon Graphics, Inc.  All Rights Reserved.

You are free to distribute this software under Version 2.1
of the GNU Lesser General Public License.
On Debian systems, refer to /usr/share/common-licenses/LGPL-2.1
for the complete text of the GNU Lesser General Public License.

Certain components (as annotated in the source) are licensed
under the terms of the GNU General Public License.
On Debian systems, the complete text of the GNU General Public
License can be found in /usr/share/common-licenses/GPL file.
------------------------------------------------------------------
acl/doc/COPYING
------------------------------------------------------------------
Most components of the "acl" package are licensed under
Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed
under Version 2 of the GNU General Public License (see below),

----------------------------------------------------------------------

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
```

the GNU Lesser General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).

Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to

this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes

make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

```
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
acl/doc/COPYING.LGPL
----------------------------------------------------------------------
Most components of the "acl" package are licensed under
Version 2.1 of the GNU Lesser General Public License (see below).
below.

Some components (as annotated in the source) are licensed
under Version 2 of the GNU General Public License (see COPYING).

----------------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
```

specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with

the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

                    GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for

making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

  Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

  You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

    (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you

```
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.


  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
```

that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library

subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
```

```
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


----------------------------------------------------------------------
acl/examples/copyperm.c
----------------------------------------------------------------------
/*
  Copyright (C) 2009  Andreas Gruenbacher <agruen@suse.de>

  This program is free software: you can redistribute it and/or modify it
  under the terms of the GNU General Public License as published by
  the Free Software Foundation, either version 2 of the License, or
  (at your option) any later version.

  This program is distributed in the hope that it will be useful,
  but WITHOUT ANY WARRANTY; without even the implied warranty of
  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
  GNU General Public License for more details.

  You should have received a copy of the GNU General Public License
  along with this program.  If not, see <http://www.gnu.org/licenses/>.
*/

#include <stdlib.h>
#include <stdio.h>
#include <stdarg.h>
#include <string.h>
#include <errno.h>
#include <locale.h>

#include <attr/error_context.h>
#include <attr/libattr.h>
#include <acl/libacl.h>

void
error(struct error_context *ctx, const char *fmt, ...)
{
        va_list ap;

        va_start(ap, fmt);
        if (vfprintf(stderr, fmt, ap))
```

```
                fprintf(stderr, ": ");
        fprintf(stderr, "%s\n", strerror(errno));
        va_end(ap);
}

struct error_context ctx = {
        error
};

int
main(int argc, char *argv[])
{
        int ret;

        setlocale(LC_MESSAGES, "");
        setlocale(LC_CTYPE, "");

        if (argc != 3) {
                fprintf(stderr, "Usage: %s from to\n", argv[0]);
                exit(1);
        }

        ret = perm_copy_file(argv[1], argv[2], &ctx);
        exit (ret == 0 ? EXIT_SUCCESS : EXIT_FAILURE);
}

----------------------------------------------------------------------
acl/examples/copy-acl.c
----------------------------------------------------------------------
/*
  Copyright (C) 2009  Andreas Gruenbacher <agruen@suse.de>

  This program is free software: you can redistribute it and/or modify it
  under the terms of the GNU General Public License as published by
  the Free Software Foundation, either version 2 of the License, or
  (at your option) any later version.

  This program is distributed in the hope that it will be useful,
  but WITHOUT ANY WARRANTY; without even the implied warranty of
  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
  GNU General Public License for more details.

  You should have received a copy of the GNU General Public License
  along with this program.  If not, see <http://www.gnu.org/licenses/>.
*/

#include <stdio.h>
#include <string.h>
#include <errno.h>
#include <libgen.h>
#include <sys/acl.h>

const char *progname;

int main(int argc, char *argv[])
{
        acl_t acl, default_acl;
        int n, ret = 0;
```

```
        progname = basename(argv[0]);

        if (argc < 3) {
                printf("%s -- copy access control lists between files \n"
                        "Usage: %s file1 file2 ...\n",
                        progname, progname);
                return 1;
        }

        acl = acl_get_file(argv[1], ACL_TYPE_ACCESS);
        if (acl == NULL) {
                fprintf(stderr, "%s: getting acl of %s: %s\n",
                        progname, argv[1], strerror(errno));
                return 1;
        }
        default_acl = acl_get_file(argv[1], ACL_TYPE_DEFAULT);
        if (default_acl == NULL) {
                fprintf(stderr, "%s: getting default acl of %s: %s\n",
                        progname, argv[1], strerror(errno));
                return 1;
        }

        for (n = 2; n < argc; n++) {
                if (acl_set_file(argv[n], ACL_TYPE_ACCESS, acl) != 0) {
                        fprintf(stderr, "%s: setting acl for %s: %s\n",
                                progname, argv[n], strerror(errno));
                        ret = 1;
                } else if (acl_set_file(argv[n], ACL_TYPE_DEFAULT,
                                        default_acl) != 0) {
                        fprintf(stderr, "%s: setting default acl for %s: %s\n",
                                progname, argv[n], strerror(errno));
                        ret = 1;
                }
        }

        acl_free(acl);
        acl_free(default_acl);

        return ret;
}
```

3.2 attr

```
attr
-----------------------------------------------------------------
attr/doc/COPYING.LGPL
-----------------------------------------------------------------
Most components of the "attr" package are licensed under
Version 2.1 of the GNU Lesser General Public License (see below).
below.

Some components (as annotated in the source) are licensed
under Version 2 of the GNU General Public License (see COPYING).

-----------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
```

code. If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

  Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU

operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy,

and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

    (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify

that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work

under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

```
  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.


  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all.  For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.
```

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN

```
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS


           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


------------------------------------------------------------------
```

attr/doc/COPYING

Most components of the "attr" package are licensed under
Version 2.1 of the GNU Lesser General Public License (see COPYING.LGPL).

Some components (as annotated in the source) are licensed
under Version 2 of the GNU General Public License (see below),

---

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

```
  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
```

these conditions, and telling the user how to view a copy of this
License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable
source code, which must be distributed under the terms of Sections
1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three
years, to give any third party, for a charge no more than your
cost of physically performing source distribution, a complete
machine-readable copy of the corresponding source code, to be
distributed under the terms of Sections 1 and 2 above on a medium
customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer
to distribute corresponding source code. (This alternative is
allowed only for noncommercial distribution and only if you
received the program in object code or executable form with such
an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it

```
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
attr/debian/copyright
----------------------------------------------------------------------
This package was debianized by Nathan Scott nathans@debian.org on
Sun, 19 Nov 2000 07:37:09 -0500.
```

```
It can be downloaded from ftp://oss.sgi.com/projects/xfs/download/

Copyright:

Copyright (C) 2001-2002 Silicon Graphics, Inc.  All Rights Reserved.
Copyright (C) 2001 Andreas Gruenbacher.

You are free to distribute this software under Version 2.1
of the GNU Lesser General Public License.
On Debian systems, refer to /usr/share/common-licenses/LGPL-2.1
for the complete text of the GNU Lesser General Public License.

Certain components (as annotated in the source) are licensed
under version 2 of the terms of the GNU General Public License.
On Debian systems, the complete text of the GNU General Public
License can be found in /usr/share/common-licenses/GPL file.
------------------------------------------------------------------
attr/examples/copyattr.c
------------------------------------------------------------------
/*
  Copyright (C) 2009  Andreas Gruenbacher <agruen@suse.de>

  This program is free software: you can redistribute it and/or modify it
  under the terms of the GNU General Public License as published by
  the Free Software Foundation, either version 2 of the License, or
  (at your option) any later version.

  This program is distributed in the hope that it will be useful,
  but WITHOUT ANY WARRANTY; without even the implied warranty of
  MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
  GNU General Public License for more details.

  You should have received a copy of the GNU General Public License
  along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */

/*
 * Example how to preserve Extended Attributes in file manager style
 * applications. This does NOT also copy Access Control Lists!
 *
 * Andreas Gruenbacher, SuSE Labs, SuSE Linux AG
 * 23 January 2003
 */

#include "config.h"

#include <sys/stat.h>
#include <stdlib.h>
#include <stdio.h>
#include <string.h>
#include <errno.h>
#include <stdarg.h>
#include <locale.h>
/* #include <libintl.h> */
#ifdef HAVE_ATTR_ERROR_CONTEXT_H
# include <attr/error_context.h>
#endif
#ifdef HAVE_ATTR_LIBATTR_H
```

```
# include <attr/libattr.h>
#endif

/*
 * We don't fully internationalize this example!
 */
#define _(msg) (msg)

/*
 * Optional error handler for attr_copy_file(). CTX is the error
 * context passed to attr_copy_file(), ERR is the errno value
 * that occurred. FMT and the rest are printf style arguments.
 */
static void
error(struct error_context *ctx, const char *fmt, ...)
{
        va_list ap;

        va_start(ap, fmt);
        if (vfprintf(stderr, fmt, ap))
                fprintf(stderr, ": ");
        fprintf(stderr, "%s\n", strerror(errno));
        va_end(ap);
}

/*
 * Optional handler for quoting path names in error messages.
 * (This is a very stupid example!)
 */
static const char *
quote(struct error_context *ctx, const char *pathname)
{
        char *pn = strdup(pathname), *p;
        pathname = strdup(pathname);
        for (p = pn; *p != '\0'; p++)
                if (*p & 0x80)
                        *p='?';
        return pn;
}

static void
quote_free(struct error_context *ctx, const char *name)
{
        free((void *)name);
}

/*
 * The error context we pass to attr_copy_file().
 */
struct error_context ctx = { error, quote, quote_free };

/*
 * Optional attribute filter for attr_copy_file(). This example
 * excludes all attributes other than extended user attributes.
 */
static int is_user_attr(const char *name, struct error_context *ctx)
{
        return strcmp(name, "user.") == 0;
}
```

```
int
main(int argc, char *argv[])
{
        int ret;

        /*
         * Set the locale to enable message translation
         */
        setlocale(LC_MESSAGES, "");
        setlocale(LC_CTYPE, "");

        if (argc != 3) {
                fprintf(stderr, _("Usage: %s from to\n"), argv[0]);
                exit(1);
        }

#if defined(HAVE_ATTR_COPY_FILE)
        /*
         * If the third parameter is NULL, all extended attributes
         * except those that define Access Control Lists are copied.
         * ACLs are excluded by default because copying them between
         * file systems with and without ACL support needs some
         * additional logic so that no unexpected permissions result.
         *
         * For copying ACLs, please use perm_copy_file() from libacl.
         *
         * The CTX parameter could also be NULL, in which case attr_copy_file
         * would print no error messages.
         */
        ret = attr_copy_file(argv[1], argv[2], is_user_attr, &ctx);
#else
        fprintf(stderr, _("No support for copying extended attributes\n"));
        ret = -1;
#endif

        if (ret != 0)
                return EXIT_FAILURE;
        return EXIT_SUCCESS;
}
```

3.3 aufs4-standalone

```
aufs4-standalone
--------------------------------------------------------------------
aufs4-standalone/COPYING
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

```
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
```

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

3.4 autoconf

```
autoconf
----------------------------------------------------------------------
autoconf/COPYING.EXCEPTION
----------------------------------------------------------------------
                    AUTOCONF CONFIGURE SCRIPT EXCEPTION
                        Version 3.0, 18 August 2009

 Copyright (C) 2009 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

This Exception is an additional permission under section 7 of the GNU
General Public License, version 3 ("GPLv3").  It applies to a given
file that bears a notice placed by the copyright holder of the file
stating that the file is governed by GPLv3 along with this Exception.

The purpose of this Exception is to allow distribution of Autoconf's
typical output under terms of the recipient's choice (including
proprietary).

0. Definitions

"Covered Code" is the source or object code of a version of Autoconf
that is a covered work under this License.

"Normally Copied Code" for a version of Autoconf means all parts of
its Covered Code which that version can copy from its code (i.e., not
from its input file) into its minimally verbose, non-debugging and
non-tracing output.

"Ineligible Code" is Covered Code that is not Normally Copied Code.

1. Grant of Additional Permission.

You have permission to propagate output of Autoconf, even if such
propagation would otherwise violate the terms of GPLv3.  However, if
by modifying Autoconf you cause any Ineligible Code of the version you
received to become Normally Copied Code of your modified version, then
you void this Exception for the resulting covered work.  If you convey
that resulting covered work, you must remove this Exception in accordance
with the second paragraph of Section 7 of GPLv3.

2. No Weakening of Autoconf Copyleft.

The availability of this Exception does not imply any general presumption
that third-party software is unaffected by the copyleft requirements of
the license of Autoconf.
----------------------------------------------------------------------
autoconf/COPYINGv3
----------------------------------------------------------------------
                     GNU GENERAL PUBLIC LICENSE
                        Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
```

of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could

make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License. Each licensee is addressed as "you". "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy. Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies. Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other

than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article

```
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
```

in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,

doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

  If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright

holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License. If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program. Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance. However,
nothing other than this License grants you permission to propagate or
modify any covered work. These actions infringe copyright if you do
not accept this License. Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License. You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations. If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License. For example, you may
not impose a license fee, royalty, or other charge for exercise of
rights granted under this License, and you may not initiate litigation
(including a cross-claim or counterclaim in a lawsuit) alleging that
any patent claim is infringed by making, using, selling, offering for
sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this
License of the Program or a work on which the Program is based. The
work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims

owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting

any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

```
    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
autoconf/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
```

rights.

  We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices

stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,

INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

```
  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
```

3.5 automake

```
automake
--------------------------------------------------------------------
automake/lib/COPYING
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
automake/t/license.sh
----------------------------------------------------------------------
#! /bin/sh
# Copyright (C) 2003-2017 Free Software Foundation, Inc.
#
# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 2, or (at your option)
# any later version.
#
# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
# GNU General Public License for more details.
#
# You should have received a copy of the GNU General Public License
# along with this program.  If not, see <http://www.gnu.org/licenses/>.

# Make sure COPYING is not overwritten, even with -a -f.

. test-init.sh

echo AC_OUTPUT >>configure.ac

cat >Makefile.am <<\EOF
```

```
test1: distdir
        grep 'GNU GENERAL PUBLIC LICENSE' $(distdir)/COPYING
test2: distdir
        grep 'MY-OWN-LICENSE' $(distdir)/COPYING
test3: distdir
        test ! -f $(distdir)/COPYING
        grep 'MY-OWN-LICENSE' $(distdir)/COPYING.LIB
EOF

:> NEWS
:> AUTHORS
:> ChangeLog
:> README

test ! -e COPYING

$ACLOCAL
$AUTOCONF
$AUTOMAKE --gnu --add-missing

./configure
$MAKE test1

# Use 'rm' before 'echo', because COPYING is likely to be a symlink to
# the real COPYING...
rm -f COPYING
echo 'MY-OWN-LICENSE' >COPYING
$MAKE test2

$AUTOMAKE --gnu --add-missing --force-missing
./configure
$MAKE test2

rm -f COPYING
echo 'MY-OWN-LICENSE' >COPYING.LIB
$AUTOMAKE --gnu --add-missing --force-missing
./configure
$MAKE test3
------------------------------------------------------------------
automake/t/copy.sh
------------------------------------------------------------------
#! /bin/sh
# Copyright (C) 1999-2017 Free Software Foundation, Inc.
#
# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 2, or (at your option)
# any later version.
#
# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
# GNU General Public License for more details.
#
# You should have received a copy of the GNU General Public License
# along with this program.  If not, see <http://www.gnu.org/licenses/>.

# Test to make sure '-c' works.  Report from Andris Pavenis.
# See also the much more in-depth test 'add-missing'.
```

```
. test-init.sh

# We'll have to cater to systems like MSYS/MinGW where there are no
# true symlinks ('ln -s' behaves like 'cp -p'); see automake bug#10441.

echo dummy > foo
if ln -s foo bar && test -h bar; then
  is_symlink () { test -h "$1"; }
  is_not_symlink () { test ! -h "$1"; }
else
  is_symlink () { return 0; } # Avoid spurious failures.
  is_not_symlink () { return 0; }
fi
rm -f foo bar

# First a simple test, where the auxdir is automatically determined
# by automake.

: > Makefile.am
rm -f install-sh

$ACLOCAL
$AUTOMAKE -c -a
ls -l # For debugging.

test -f install-sh
is_not_symlink install-sh

# Let's do a couple of more elaborated tests, this time with the auxdir
# explicitly defined in configure.ac.

mkdir sub
cd sub

cat > configure.ac <<END
AC_INIT([$me], [1.0])
AC_CONFIG_AUX_DIR([auxdir])
AM_INIT_AUTOMAKE
AC_PROG_CC
AC_CONFIG_FILES([Makefile])
AC_OUTPUT
END

cat > Makefile.am <<END
bin_PROGRAMS = foo
END

$ACLOCAL

# 'automake -a' called without '-c' should create symlinks by default,
# even when there is already a non-symlinked required auxiliary file.

mkdir auxdir
echo FAKE-DEPCOMP > auxdir/depcomp
$AUTOMAKE -a
ls -l auxdir # For debugging.
test -f auxdir/install-sh
is_symlink auxdir/install-sh
```

```
test -f auxdir/depcomp
is_not_symlink auxdir/depcomp
test FAKE-DEPCOMP = "$(cat auxdir/depcomp)"

# 'automake -a -c' should not create symlinks, even when there are
# already symlinked required auxiliary files.

rm -rf auxdir
mkdir auxdir
cd auxdir
ln -s "$am_scriptdir/missing" "$am_scriptdir/install-sh" .
cd ..

$AUTOMAKE -a -c
ls -l auxdir # For debugging.
test -f auxdir/install-sh
is_symlink auxdir/install-sh
test -f auxdir/missing
is_symlink auxdir/missing
test -f auxdir/depcomp
is_not_symlink auxdir/depcomp
diff "$am_scriptdir"/depcomp auxdir/depcomp

:
-------------------------------------------------------------------
automake/t/license2.sh
-------------------------------------------------------------------
#! /bin/sh
# Copyright (C) 2008-2017 Free Software Foundation, Inc.
#
# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 2, or (at your option)
# any later version.
#
# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
# GNU General Public License for more details.
#
# You should have received a copy of the GNU General Public License
# along with this program.  If not, see <http://www.gnu.org/licenses/>.

# Check that installing 'COPYING' outputs a warning.

. test-init.sh

cat > Makefile.am << 'END'
AUTOMAKE_OPTIONS = gnu
END

: >AUTHORS
: >NEWS
: >README
: >ChangeLog
: >INSTALL

$ACLOCAL
AUTOMAKE_fails
```

```
grep 'COPYING' stderr

AUTOMAKE_run --add-missing
grep 'COPYING' stderr
grep 'GNU General Public License' stderr
grep 'Consider adding.*version control' stderr
test -f COPYING
----------------------------------------------------------------
automake/COPYING
----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.
```

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under

these conditions, and telling the user how to view a copy of this
License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable
source code, which must be distributed under the terms of Sections
1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three
years, to give any third party, for a charge no more than your
cost of physically performing source distribution, a complete
machine-readable copy of the corresponding source code, to be
distributed under the terms of Sections 1 and 2 above on a medium
customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer
to distribute corresponding source code. (This alternative is
allowed only for noncommercial distribution and only if you
received the program in object code or executable form with such
an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it

free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

3.6 bash

```
bash
------------------------------------------------------------------
bash/lib/readline/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
bash/copy_cmd.c
----------------------------------------------------------------------
/* copy_command.c -- copy a COMMAND structure.  This is needed
   primarily for making function definitions, but I'm not sure
   that anyone else will need it.  */

/* Copyright (C) 1987-2009 Free Software Foundation, Inc.

   This file is part of GNU Bash, the Bourne Again SHell.

   Bash is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation, either version 3 of the License, or
   (at your option) any later version.

   Bash is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with Bash.  If not, see <http://www.gnu.org/licenses/>.
*/

#include "config.h"
```

```
#include "bashtypes.h"

#if defined (HAVE_UNISTD_H)
#  include <unistd.h>
#endif

#include <stdio.h>

#include "shell.h"

static PATTERN_LIST *copy_case_clause __P((PATTERN_LIST *));
static PATTERN_LIST *copy_case_clauses __P((PATTERN_LIST *));
static FOR_COM *copy_for_command __P((FOR_COM *));
#if defined (ARITH_FOR_COMMAND)
static ARITH_FOR_COM *copy_arith_for_command __P((ARITH_FOR_COM *));
#endif
static GROUP_COM *copy_group_command __P((GROUP_COM *));
static SUBSHELL_COM *copy_subshell_command __P((SUBSHELL_COM *));
static COPROC_COM *copy_coproc_command __P((COPROC_COM *));
static CASE_COM *copy_case_command __P((CASE_COM *));
static WHILE_COM *copy_while_command __P((WHILE_COM *));
static IF_COM *copy_if_command __P((IF_COM *));
#if defined (DPAREN_ARITHMETIC)
static ARITH_COM *copy_arith_command __P((ARITH_COM *));
#endif
#if defined (COND_COMMAND)
static COND_COM *copy_cond_command __P((COND_COM *));
#endif
static SIMPLE_COM *copy_simple_command __P((SIMPLE_COM *));

WORD_DESC *
copy_word (w)
     WORD_DESC *w;
{
  WORD_DESC *new_word;

  new_word = make_bare_word (w->word);
  new_word->flags = w->flags;
  return (new_word);
}

/* Copy the chain of words in LIST.  Return a pointer to
   the new chain. */
WORD_LIST *
copy_word_list (list)
     WORD_LIST *list;
{
  WORD_LIST *new_list;

  for (new_list = (WORD_LIST *)NULL; list; list = list->next)
    new_list = make_word_list (copy_word (list->word), new_list);

  return (REVERSE_LIST (new_list, WORD_LIST *));
}

static PATTERN_LIST *
copy_case_clause (clause)
     PATTERN_LIST *clause;
```

```
{
  PATTERN_LIST *new_clause;

  new_clause = (PATTERN_LIST *)xmalloc (sizeof (PATTERN_LIST));
  new_clause->patterns = copy_word_list (clause->patterns);
  new_clause->action = copy_command (clause->action);
  new_clause->flags = clause->flags;
  return (new_clause);
}

static PATTERN_LIST *
copy_case_clauses (clauses)
     PATTERN_LIST *clauses;
{
  PATTERN_LIST *new_list, *new_clause;

  for (new_list = (PATTERN_LIST *)NULL; clauses; clauses = clauses->next)
    {
      new_clause = copy_case_clause (clauses);
      new_clause->next = new_list;
      new_list = new_clause;
    }
  return (REVERSE_LIST (new_list, PATTERN_LIST *));
}

/* Copy a single redirect. */
REDIRECT *
copy_redirect (redirect)
     REDIRECT *redirect;
{
  REDIRECT *new_redirect;

  new_redirect = (REDIRECT *)xmalloc (sizeof (REDIRECT));
#if 0
  FASTCOPY ((char *)redirect, (char *)new_redirect, (sizeof (REDIRECT)));
#else
  *new_redirect = *redirect;    /* let the compiler do the fast structure copy */
#endif

  if (redirect->rflags & REDIR_VARASSIGN)
    new_redirect->redirector.filename = copy_word (redirect->redirector.filename);

  switch (redirect->instruction)
    {
    case r_reading_until:
    case r_deblank_reading_until:
      new_redirect->here_doc_eof = redirect->here_doc_eof ? savestring (redirect->here_doc_eof) : 0;
      /*FALLTHROUGH*/
    case r_reading_string:
    case r_appending_to:
    case r_output_direction:
    case r_input_direction:
    case r_inputa_direction:
    case r_err_and_out:
    case r_append_err_and_out:
    case r_input_output:
    case r_output_force:
    case r_duplicating_input_word:
    case r_duplicating_output_word:
```

```
    case r_move_input_word:
    case r_move_output_word:
      new_redirect->redirectee.filename = copy_word (redirect->redirectee.filename);
      break;
    case r_duplicating_input:
    case r_duplicating_output:
    case r_move_input:
    case r_move_output:
    case r_close_this:
      break;
    }
  return (new_redirect);
}

REDIRECT *
copy_redirects (list)
     REDIRECT *list;
{
  REDIRECT *new_list, *temp;

  for (new_list = (REDIRECT *)NULL; list; list = list->next)
    {
      temp = copy_redirect (list);
      temp->next = new_list;
      new_list = temp;
    }
  return (REVERSE_LIST (new_list, REDIRECT *));
}

static FOR_COM *
copy_for_command (com)
     FOR_COM *com;
{
  FOR_COM *new_for;

  new_for = (FOR_COM *)xmalloc (sizeof (FOR_COM));
  new_for->flags = com->flags;
  new_for->line = com->line;
  new_for->name = copy_word (com->name);
  new_for->map_list = copy_word_list (com->map_list);
  new_for->action = copy_command (com->action);
  return (new_for);
}

#if defined (ARITH_FOR_COMMAND)
static ARITH_FOR_COM *
copy_arith_for_command (com)
     ARITH_FOR_COM *com;
{
  ARITH_FOR_COM *new_arith_for;

  new_arith_for = (ARITH_FOR_COM *)xmalloc (sizeof (ARITH_FOR_COM));
  new_arith_for->flags = com->flags;
  new_arith_for->line = com->line;
  new_arith_for->init = copy_word_list (com->init);
  new_arith_for->test = copy_word_list (com->test);
  new_arith_for->step = copy_word_list (com->step);
  new_arith_for->action = copy_command (com->action);
  return (new_arith_for);
```

```
}
#endif /* ARITH_FOR_COMMAND */

static GROUP_COM *
copy_group_command (com)
     GROUP_COM *com;
{
  GROUP_COM *new_group;

  new_group = (GROUP_COM *)xmalloc (sizeof (GROUP_COM));
  new_group->command = copy_command (com->command);
  return (new_group);
}

static SUBSHELL_COM *
copy_subshell_command (com)
     SUBSHELL_COM *com;
{
  SUBSHELL_COM *new_subshell;

  new_subshell = (SUBSHELL_COM *)xmalloc (sizeof (SUBSHELL_COM));
  new_subshell->command = copy_command (com->command);
  new_subshell->flags = com->flags;
  return (new_subshell);
}

static COPROC_COM *
copy_coproc_command (com)
     COPROC_COM *com;
{
  COPROC_COM *new_coproc;

  new_coproc = (COPROC_COM *)xmalloc (sizeof (COPROC_COM));
  new_coproc->name = savestring (com->name);
  new_coproc->command = copy_command (com->command);
  new_coproc->flags = com->flags;
  return (new_coproc);
}

static CASE_COM *
copy_case_command (com)
     CASE_COM *com;
{
  CASE_COM *new_case;

  new_case = (CASE_COM *)xmalloc (sizeof (CASE_COM));
  new_case->flags = com->flags;
  new_case->line = com->line;
  new_case->word = copy_word (com->word);
  new_case->clauses = copy_case_clauses (com->clauses);
  return (new_case);
}

static WHILE_COM *
copy_while_command (com)
     WHILE_COM *com;
{
  WHILE_COM *new_while;
```

```
  new_while = (WHILE_COM *)xmalloc (sizeof (WHILE_COM));
  new_while->flags = com->flags;
  new_while->test = copy_command (com->test);
  new_while->action = copy_command (com->action);
  return (new_while);
}

static IF_COM *
copy_if_command (com)
     IF_COM *com;
{
  IF_COM *new_if;

  new_if = (IF_COM *)xmalloc (sizeof (IF_COM));
  new_if->flags = com->flags;
  new_if->test = copy_command (com->test);
  new_if->true_case = copy_command (com->true_case);
  new_if->false_case = com->false_case ? copy_command (com->false_case) : com->false_case;
  return (new_if);
}

#if defined (DPAREN_ARITHMETIC)
static ARITH_COM *
copy_arith_command (com)
     ARITH_COM *com;
{
  ARITH_COM *new_arith;

  new_arith = (ARITH_COM *)xmalloc (sizeof (ARITH_COM));
  new_arith->flags = com->flags;
  new_arith->exp = copy_word_list (com->exp);
  new_arith->line = com->line;

  return (new_arith);
}
#endif

#if defined (COND_COMMAND)
static COND_COM *
copy_cond_command (com)
     COND_COM *com;
{
  COND_COM *new_cond;

  new_cond = (COND_COM *)xmalloc (sizeof (COND_COM));
  new_cond->flags = com->flags;
  new_cond->line = com->line;
  new_cond->type = com->type;
  new_cond->op = com->op ? copy_word (com->op) : com->op;
  new_cond->left = com->left ? copy_cond_command (com->left) : (COND_COM *)NULL;
  new_cond->right = com->right ? copy_cond_command (com->right) : (COND_COM *)NULL;

  return (new_cond);
}
#endif

static SIMPLE_COM *
copy_simple_command (com)
     SIMPLE_COM *com;
```

```
{
  SIMPLE_COM *new_simple;

  new_simple = (SIMPLE_COM *)xmalloc (sizeof (SIMPLE_COM));
  new_simple->flags = com->flags;
  new_simple->words = copy_word_list (com->words);
  new_simple->redirects = com->redirects ? copy_redirects (com->redirects) : (REDIRECT *)NULL;
  new_simple->line = com->line;
  return (new_simple);
}

FUNCTION_DEF *
copy_function_def_contents (old, new_def)
     FUNCTION_DEF *old, *new_def;
{
  new_def->name = copy_word (old->name);
  new_def->command = old->command ? copy_command (old->command) : old->command;
  new_def->flags = old->flags;
  new_def->line = old->line;
  new_def->source_file = old->source_file ? savestring (old->source_file) : old->source_file;
  return (new_def);
}

FUNCTION_DEF *
copy_function_def (com)
     FUNCTION_DEF *com;
{
  FUNCTION_DEF *new_def;

  new_def = (FUNCTION_DEF *)xmalloc (sizeof (FUNCTION_DEF));
  new_def = copy_function_def_contents (com, new_def);
  return (new_def);
}

/* Copy the command structure in COMMAND.  Return a pointer to the
   copy.  Don't you forget to dispose_command () on this pointer
   later! */
COMMAND *
copy_command (command)
     COMMAND *command;
{
  COMMAND *new_command;

  if (command == NULL)
    return (command);

  new_command = (COMMAND *)xmalloc (sizeof (COMMAND));
  FASTCOPY ((char *)command, (char *)new_command, sizeof (COMMAND));
  new_command->flags = command->flags;
  new_command->line = command->line;

  if (command->redirects)
    new_command->redirects = copy_redirects (command->redirects);

  switch (command->type)
    {
      case cm_for:
        new_command->value.For = copy_for_command (command->value.For);
        break;
```

```
#if defined (ARITH_FOR_COMMAND)
      case cm_arith_for:
        new_command->value.ArithFor = copy_arith_for_command (command->value.ArithFor);
        break;
#endif

#if defined (SELECT_COMMAND)
      case cm_select:
        new_command->value.Select =
          (SELECT_COM *)copy_for_command ((FOR_COM *)command->value.Select);
        break;
#endif

      case cm_group:
        new_command->value.Group = copy_group_command (command->value.Group);
        break;

      case cm_subshell:
        new_command->value.Subshell = copy_subshell_command (command->value.Subshell);
        break;

      case cm_coproc:
        new_command->value.Coproc = copy_coproc_command (command->value.Coproc);
        break;

      case cm_case:
        new_command->value.Case = copy_case_command (command->value.Case);
        break;

      case cm_until:
      case cm_while:
        new_command->value.While = copy_while_command (command->value.While);
        break;

      case cm_if:
        new_command->value.If = copy_if_command (command->value.If);
        break;

#if defined (DPAREN_ARITHMETIC)
      case cm_arith:
        new_command->value.Arith = copy_arith_command (command->value.Arith);
        break;
#endif

#if defined (COND_COMMAND)
      case cm_cond:
        new_command->value.Cond = copy_cond_command (command->value.Cond);
        break;
#endif

      case cm_simple:
        new_command->value.Simple = copy_simple_command (command->value.Simple);
        break;

      case cm_connection:
        {
          CONNECTION *new_connection;
```

```
          new_connection = (CONNECTION *)xmalloc (sizeof (CONNECTION));
          new_connection->connector = command->value.Connection->connector;
          new_connection->first = copy_command (command->value.Connection->first);
          new_connection->second = copy_command (command->value.Connection->second);
          new_command->value.Connection = new_connection;
          break;
        }

      case cm_function_def:
        new_command->value.Function_def = copy_function_def (command->value.Function_def);
        break;
    }
  return (new_command);
}
----------------------------------------------------------------------
bash/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.
```

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its

content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to

"keep intact all notices".

c) You must license the entire work, as a whole, under this
License to anyone who comes into possession of a copy. This
License will therefore apply, along with any applicable section 7
additional terms, to the whole of the work, and all its parts,
regardless of how they are packaged. This License gives no
permission to license the work in any other way, but it does not
invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display
Appropriate Legal Notices; however, if the Program has interactive
interfaces that do not display Appropriate Legal Notices, your
work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by the
Corresponding Source fixed on a durable physical medium
customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the

    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,

in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

```
  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
```

work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a

covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered

version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
bash/tests/COPYRIGHT
----------------------------------------------------------------------
Unless otherwise stated, all files in this directory are Copyright (C)
1991,1992,1993,1994,1995,1996,1997,1998,1999,2000,2001,2002,2003,
2004,2005,2006,2007,2008,2009,2010,2011
Free Software Foundation, Inc.

See the file COPYING in the bash distribution root directory for copying
and usage restrictions.

The file ifs-posix.tests is Copyright (C) 2005 Glen Fowler.
```

3.7 bc

```
bc
----------------------------------------------------------------------
bc/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable. Therefore, we
have designed this version of the GPL to prohibit the practice for those
products. If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License. Each licensee is addressed as "you". "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy. Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies. Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

```
    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
```

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

```
  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
```

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
bc/COPYING.LIB
----------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
```

Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library. The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library. You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the

```
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
   GNU GPL, and only to the extent that such information is
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
   the Minimal Corresponding Source and Corresponding Application
   Code. If you use option 4d1, you must provide the Installation
   Information in the manner specified by section 6 of the GNU GPL
   for conveying Corresponding Source.)

  5. Combined Libraries.

  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

   a) Accompany the combined library with a copy of the same work based
   on the Library, uncombined with any other library facilities,
   conveyed under the terms of this License.

   b) Give prominent notice with the combined library that part of it
   is a work based on the Library, and explaining where to find the
```

accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library as you received it specifies that a certain numbered version of the GNU Lesser General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that published version or of any later version published by the Free Software Foundation. If the Library as you received it does not specify a version number of the GNU Lesser General Public License, you may choose any version of the GNU Lesser General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide whether future versions of the GNU Lesser General Public License shall apply, that proxy's public statement of acceptance of any version is permanent authorization for you to choose that version for the Library.

3.8 binutils

```
binutils
-----------------------------------------------------------------
binutils/bfd/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

```
  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
--------------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc-eliminate.d
--------------------------------------------------------------------
.*
DYNAMIC RELOCATION RECORDS
OFFSET.*TYPE.*VALUE.*
.*R_AARCH64_ABS64.*global_a
--------------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc-exe-2.s
--------------------------------------------------------------------
        # expect copy relocation for all these scenarios.
        .global p
        .global q
        .global r
        .section        .data.rel.ro,"aw",%progbits
        .align  3
        .type   p, %object
        .size   p, 8
p:
        .xword  global_a

        .type   q, %object
        .size   q, 8
q:
        .xword  global_b
```

```
        .type   r, %object
        .size   r, 8
r:
        # Any pc-rel relocation as no dynamic linker support on AArch64.
        .xword  global_c - .

        .text
        .global main
main:
        # Symbols are referenced by any other relocation against read-only
        # section.
        movz x0, :abs_g0_nc:global_a
        adrp x1, global_b
        # pc-rel.
        adrp x2, global_d
        add x2, x2, #:lo12:global_c
----------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc.d
----------------------------------------------------------------
.*
DYNAMIC RELOCATION RECORDS
OFFSET.*TYPE.*VALUE.*
.*R_AARCH64_COPY.*global_a
----------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc-exe.s
----------------------------------------------------------------
        .text
        .global main
main:
        movz x0,:abs_g0_nc:global_a
        movk x0,:abs_g1_nc:global_a
        movk x0,:abs_g2_nc:global_a
        movk x0,:abs_g3:global_a
----------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc-so.s
----------------------------------------------------------------
        .global global_a
        .type   global_a, %object
        .size   global_a, 4

        .global global_b
        .type   global_b, %object
        .size   global_b, 4

        .global global_c
        .type   global_c, %object
        .size   global_c, 4

        .global global_d
        .type   global_d, %object
        .size   global_d, 4

        .data
global_a:
        .word 0xcafedead
global_b:
        .word 0xcafecafe
global_c:
        .word 0xdeadcafe
```

```
global_d:
        .word 0xdeaddead
----------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc-exe-eliminate.s
----------------------------------------------------------------
        .global p
        .section        .data.rel.ro,"aw",%progbits
        .align  3
        .type   p, %object
        .size   p, 8
p:
        .xword  global_a
----------------------------------------------------------------
binutils/ld/testsuite/ld-aarch64/copy-reloc-2.d
----------------------------------------------------------------
.*
DYNAMIC RELOCATION RECORDS
OFFSET.*TYPE.*VALUE.*
.*R_AARCH64_COPY.*global_[abcd]
.*R_AARCH64_COPY.*global_[abcd]
.*R_AARCH64_COPY.*global_[abcd]
.*R_AARCH64_COPY.*global_[abcd]
----------------------------------------------------------------
binutils/ld/testsuite/ld-x86-64/copyreloc-lib.c
----------------------------------------------------------------
int a_glob = 2;
----------------------------------------------------------------
binutils/ld/testsuite/ld-x86-64/copyreloc-main2.rd
----------------------------------------------------------------
#failif
#...
[0-9a-f ]+R_X86_64_NONE.*
#...
----------------------------------------------------------------
binutils/ld/testsuite/ld-x86-64/copyreloc-main.out
----------------------------------------------------------------
----------------------------------------------------------------
binutils/ld/testsuite/ld-x86-64/copyreloc-main1.rd
----------------------------------------------------------------
#...
[0-9a-f ]+R_X86_64_COPY+[0-9a-f ]+ +a_glob \+ 0
#...
----------------------------------------------------------------
binutils/ld/testsuite/ld-x86-64/copyreloc-main.S
----------------------------------------------------------------
        .section        .text.startup,"ax",@progbits
        .p2align 4,,15
        .globl  main
        .type   main, @function
main:
.LFB0:
        .cfi_startproc
        xorl    %eax, %eax
        cmpl    $2, a_glob(%rip)
        setne   %al
        ret
        .cfi_endproc
.LFE0:
        .size   main, .-main
```

```
        .section        .note.GNU-stack,"",@progbits
-----------------------------------------------------------------
binutils/ld/testsuite/ld-i386/copyreloc-lib.c
-----------------------------------------------------------------
int a_glob = 2;
-----------------------------------------------------------------
binutils/ld/testsuite/ld-i386/copyreloc-main2.rd
-----------------------------------------------------------------
#failif
#...
[0-9a-f ]+R_386_NONE.*
#...
-----------------------------------------------------------------
binutils/ld/testsuite/ld-i386/copyreloc-main.out
-----------------------------------------------------------------
-----------------------------------------------------------------
binutils/ld/testsuite/ld-i386/copyreloc-main1.rd
-----------------------------------------------------------------
#...
[0-9a-f ]+R_386_COPY+[0-9a-f ]+ +a_glob
#...
-----------------------------------------------------------------
binutils/ld/testsuite/ld-i386/copyreloc-main.S
-----------------------------------------------------------------
        .section        .text.startup,"ax",@progbits
        .p2align 4,,15
        .globl  main
        .type   main, @function
main:
        .cfi_startproc
        call    __x86.get_pc_thunk.ax
        addl    $_GLOBAL_OFFSET_TABLE_, %eax
        cmpl    $2, a_glob@GOTOFF(%eax)
        setne   %al
        movzbl  %al, %eax
        ret
        .cfi_endproc
        .size   main, .-main
        .section        .text.__x86.get_pc_thunk.ax,"axG",@progbits,__x86.get_pc_thunk.ax,comdat
        .globl  __x86.get_pc_thunk.ax
        .hidden __x86.get_pc_thunk.ax
        .type   __x86.get_pc_thunk.ax, @function
__x86.get_pc_thunk.ax:
        .cfi_startproc
        movl    (%esp), %eax
        ret
        .cfi_endproc
        .section        .note.GNU-stack,"",@progbits
-----------------------------------------------------------------
binutils/COPYING3
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble
```

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that

Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

```
  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.
```

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status

of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of

that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License. Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version,

but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

```
  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all.  For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation.  If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.
```

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program> Copyright (C) <year> <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it

```
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
binutils/binutils/testsuite/binutils-all/copy-4.d
----------------------------------------------------------------------
#PROG: strip
#source: bintest.s
#strip: --strip-unneeded
#nm: -n
#not-target: *-*-aix* *-*-linuxecoff
#name: strip --strip-unneeded on common symbol

#...
0+04 C common_symbol
#pass
----------------------------------------------------------------------
binutils/binutils/testsuite/binutils-all/copy-3.d
----------------------------------------------------------------------
#PROG: objcopy
#objdump: -h
#objcopy: --set-section-flags .text=alloc,data
#name: copy with setting section flags 3
#source: bintest.s
#not-target: *-*-*aout *-*-*coff *-*-cygwin* *-*-darwin *-*-mingw* *-*-go32 *-*-*pe hppa*-*-hpux* m68k
# The .text # section in PE/COFF has a fixed set of flags and these
# cannot be changed.  We skip it for them.

.*: +file format .*

Sections:
Idx.*
#...
  [0-9]* .text.*
                  CONTENTS, ALLOC, LOAD, RELOC, DATA
#...
----------------------------------------------------------------------
binutils/binutils/testsuite/binutils-all/copytest.s
----------------------------------------------------------------------
        .globl foo_symbol
        .section foo
foo_symbol:
        .long   1
        .section bar
bar_symbol:
```

```
        .long   2
----------------------------------------------------------------
binutils/binutils/testsuite/binutils-all/copy-1.s
----------------------------------------------------------------
        .globl text_symbol
        .text
text_symbol:
        .long   1
        .section .post_text_reserve,"w", %nobits
        .space 160
----------------------------------------------------------------
binutils/binutils/testsuite/binutils-all/copy-1.d
----------------------------------------------------------------
#PROG: objcopy
#objdump: -h
#objcopy: --set-section-flags .post_text_reserve=contents,alloc,load,readonly,code
#name: copy with setting section flags 1

.*: +file format .*

Sections:
Idx.*
#...
  [0-9]* .post_text_reserve.*
                  CONTENTS, ALLOC, LOAD, READONLY, CODE
#...
----------------------------------------------------------------
binutils/binutils/testsuite/binutils-all/copy-2.d
----------------------------------------------------------------
#PROG: objcopy
#objdump: -h
#objcopy: --set-section-flags foo=contents,alloc,load,code
#name: copy with setting section flags 2
#source: copytest.s
#not-target: *-*-*aout *-*-aix* h8300-*-* hppa*-*-hpux* m68k-*-netbsd m68k-*-openbsd* mips-sony-bsd* mips-*-ult
# Note - we use copytest.s and a section named "foo" rather
# than .text because for some file formats (eg PE) the .text
# section has a fixed set of flags and these cannot be changed.

.*: +file format .*

Sections:
Idx.*
#...
  [0-9]* foo.*
                  CONTENTS, ALLOC, LOAD, CODE
#...
----------------------------------------------------------------
binutils/gold/copy-relocs.h
----------------------------------------------------------------
// copy-relocs.h -- handle COPY relocations for gold   -*- C++ -*-

// Copyright (C) 2006-2018 Free Software Foundation, Inc.
// Written by Ian Lance Taylor <iant@google.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
```

```
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

#ifndef GOLD_COPY_RELOCS_H
#define GOLD_COPY_RELOCS_H

#include "elfcpp.h"
#include "reloc-types.h"
#include "output.h"

namespace gold
{

// This class is used to manage COPY relocations.  We try to avoid
// them when possible.  A COPY relocation may be required when an
// executable refers to a variable defined in a shared library.  COPY
// relocations are problematic because they tie the executable to the
// exact size of the variable in the shared library.  We can avoid
// them if all the references to the variable are in a writeable
// section.  In that case we can simply use dynamic relocations.
// However, when scanning relocs, we don't know when we see the
// relocation whether we will be forced to use a COPY relocation or
// not.  So we have to save the relocation during the reloc scanning,
// and then emit it as a dynamic relocation if necessary.  This class
// implements that.  It is used by the target specific code.

// The template parameter SH_TYPE is the type of the reloc section to
// be used for COPY relocs: elfcpp::SHT_REL or elfcpp::SHT_RELA.

template<int sh_type, int size, bool big_endian>
class Copy_relocs
{
 private:
  typedef typename Reloc_types<sh_type, size, big_endian>::Reloc Reloc;

 public:
  Copy_relocs(unsigned int copy_reloc_type)
    : entries_(), copy_reloc_type_(copy_reloc_type), dynbss_(NULL),
      dynrelro_(NULL)
  { }

  // This is called while scanning relocs if we see a relocation
  // against a symbol which may force us to generate a COPY reloc.
  // SYM is the symbol.  OBJECT is the object whose relocs we are
  // scanning.  The relocation is being applied to section SHNDX in
  // OBJECT.  OUTPUT_SECTION is the output section where section SHNDX
  // will wind up.  REL is the reloc itself.  The Output_data_reloc
  // section is where the dynamic relocs are put.
  void
```

```
 copy_reloc(Symbol_table*,
            Layout*,
            Sized_symbol<size>* sym,
            Sized_relobj_file<size, big_endian>* object,
            unsigned int shndx,
            Output_section* output_section,
            unsigned int r_type,
            typename elfcpp::Elf_types<size>::Elf_Addr r_offset,
            typename elfcpp::Elf_types<size>::Elf_Swxword r_addend,
            Output_data_reloc<sh_type, true, size, big_endian>*);

 // Return whether there are any saved relocations.
 bool
 any_saved_relocs() const
 { return !this->entries_.empty(); }

 // Emit any saved relocations which turn out to be needed.  This is
 // called after all the relocs have been scanned.
 void
 emit(Output_data_reloc<sh_type, true, size, big_endian>*);

 // Emit a COPY reloc.
 void
 emit_copy_reloc(Symbol_table*, Sized_symbol<size>*,
                 Output_data*, off_t,
                 Output_data_reloc<sh_type, true, size, big_endian>*);

protected:
 typedef typename elfcpp::Elf_types<size>::Elf_Addr Address;
 typedef typename elfcpp::Elf_types<size>::Elf_Addr Addend;

 // This POD class holds the relocations we are saving.  We will emit
 // these relocations if it turns out that the symbol does not
 // require a COPY relocation.
 struct Copy_reloc_entry
 {
   Copy_reloc_entry(Symbol* sym, unsigned int reloc_type,
                    Sized_relobj_file<size, big_endian>* relobj,
                    unsigned int shndx,
                    Output_section* output_section,
                    Address address, Addend addend)
     : sym_(sym), reloc_type_(reloc_type), relobj_(relobj),
       shndx_(shndx), output_section_(output_section),
       address_(address), addend_(addend)
   { }

   Symbol* sym_;
   unsigned int reloc_type_;
   Sized_relobj_file<size, big_endian>* relobj_;
   unsigned int shndx_;
   Output_section* output_section_;
   Address address_;
   Addend addend_;
 };

 // Make a new COPY reloc and emit it.
 void
 make_copy_reloc(Symbol_table*, Layout*, Sized_symbol<size>*,
                 Sized_relobj_file<size, big_endian>* object,
```

```
                 Output_data_reloc<sh_type, true, size, big_endian>*);

  // A list of relocs to be saved.
  typedef std::vector<Copy_reloc_entry> Copy_reloc_entries;

  // The list of relocs we are saving.
  Copy_reloc_entries entries_;

 private:
  // Return whether we need a COPY reloc.
  bool
  need_copy_reloc(Sized_symbol<size>* gsym,
                  Sized_relobj_file<size, big_endian>* object,
                  unsigned int shndx) const;

  // Save a reloc against SYM for possible emission later.
  void
  save(Symbol*,
       Sized_relobj_file<size, big_endian>*,
       unsigned int shndx,
       Output_section*,
       unsigned int r_type,
       typename elfcpp::Elf_types<size>::Elf_Addr r_offset,
       typename elfcpp::Elf_types<size>::Elf_Swxword r_addend);

  // The target specific relocation type of the COPY relocation.
  const unsigned int copy_reloc_type_;
  // The dynamic BSS data which goes into the .bss section.  This is
  // where writable variables which require COPY relocations are placed.
  Output_data_space* dynbss_;
  // The dynamic read-only data, which goes into the .data.rel.ro section.
  // This is where read-only variables which require COPY relocations are
  // placed.
  Output_data_space* dynrelro_;
};

} // End namespace gold.

#endif // !defined(GOLD_COPY_RELOCS_H)
----------------------------------------------------------------
binutils/gold/copy-relocs.cc
----------------------------------------------------------------
// copy-relocs.cc -- handle COPY relocations for gold.

// Copyright (C) 2006-2018 Free Software Foundation, Inc.
// Written by Ian Lance Taylor <iant@google.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
```

```
// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

#include "gold.h"

#include "symtab.h"
#include "copy-relocs.h"

namespace gold
{

// Copy_relocs methods.

// Handle a relocation against a symbol which may force us to generate
// a COPY reloc.

template<int sh_type, int size, bool big_endian>
void
Copy_relocs<sh_type, size, big_endian>::copy_reloc(
    Symbol_table* symtab,
    Layout* layout,
    Sized_symbol<size>* sym,
    Sized_relobj_file<size, big_endian>* object,
    unsigned int shndx,
    Output_section* output_section,
    unsigned int r_type,
    typename elfcpp::Elf_types<size>::Elf_Addr r_offset,
    typename elfcpp::Elf_types<size>::Elf_Swxword r_addend,
    Output_data_reloc<sh_type, true, size, big_endian>* reloc_section)
{
  if (this->need_copy_reloc(sym, object, shndx))
    this->make_copy_reloc(symtab, layout, sym, object, reloc_section);
  else
    {
      // We may not need a COPY relocation.  Save this relocation to
      // possibly be emitted later.
      this->save(sym, object, shndx, output_section,
                 r_type, r_offset, r_addend);
    }
}

// Return whether we need a COPY reloc for a relocation against SYM.
// The relocation is begin applied to section SHNDX in OBJECT.

template<int sh_type, int size, bool big_endian>
bool
Copy_relocs<sh_type, size, big_endian>::need_copy_reloc(
    Sized_symbol<size>* sym,
    Sized_relobj_file<size, big_endian>* object,
    unsigned int shndx) const
{
  if (!parameters->options().copyreloc())
    return false;

  if (sym->symsize() == 0)
    return false;
```

```
  // If this is a readonly section, then we need a COPY reloc.
  // Otherwise we can use a dynamic reloc.  Note that calling
  // section_flags here can be slow, as the information is not cached;
  // fortunately we shouldn't see too many potential COPY relocs.
  if ((object->section_flags(shndx) & elfcpp::SHF_WRITE) == 0)
    return true;

  return false;
}

// Emit a COPY relocation for SYM.

template<int sh_type, int size, bool big_endian>
void
Copy_relocs<sh_type, size, big_endian>::emit_copy_reloc(
    Symbol_table* symtab,
    Sized_symbol<size>* sym,
    Output_data* posd,
    off_t offset,
    Output_data_reloc<sh_type, true, size, big_endian>* reloc_section)
{
  // Define the symbol as being copied.
  symtab->define_with_copy_reloc(sym, posd, offset);

  // Add the COPY relocation to the dynamic reloc section.
  reloc_section->add_global_generic(sym, this->copy_reloc_type_, posd,
                                    offset, 0);
}

// Make a COPY relocation for SYM and emit it.

template<int sh_type, int size, bool big_endian>
void
Copy_relocs<sh_type, size, big_endian>::make_copy_reloc(
    Symbol_table* symtab,
    Layout* layout,
    Sized_symbol<size>* sym,
    Sized_relobj_file<size, big_endian>* object,
    Output_data_reloc<sh_type, true, size, big_endian>* reloc_section)
{
  // We should not be here if -z nocopyreloc is given.
  gold_assert(parameters->options().copyreloc());

  gold_assert(sym->is_from_dynobj());

  // The symbol must not have protected visibility.
  if (sym->is_protected())
    {
      gold_error(_("%s: cannot make copy relocation for "
                   "protected symbol '%s', defined in %s"),
                 object->name().c_str(),
                 sym->name(),
                 sym->object()->name().c_str());
    }

  typename elfcpp::Elf_types<size>::Elf_WXword symsize = sym->symsize();

  // There is no defined way to determine the required alignment of
  // the symbol.  We know that the symbol is defined in a dynamic
```

```
// object.  We start with the alignment of the section in which it
// is defined; presumably we do not require an alignment larger than
// that.  Then we reduce that alignment if the symbol is not aligned
// within the section.
bool is_ordinary;
unsigned int shndx = sym->shndx(&is_ordinary);
gold_assert(is_ordinary);
typename elfcpp::Elf_types<size>::Elf_WXword addralign;
bool is_readonly = false;

{
  // Lock the object so we can read from it.  This is only called
  // single-threaded from scan_relocs, so it is OK to lock.
  // Unfortunately we have no way to pass in a Task token.
  const Task* dummy_task = reinterpret_cast<const Task*>(-1);
  Object* obj = sym->object();
  Task_lock_obj<Object> tl(dummy_task, obj);
  addralign = obj->section_addralign(shndx);
  if (parameters->options().relro())
    {
      if ((obj->section_flags(shndx) & elfcpp::SHF_WRITE) == 0)
        is_readonly = true;
      else
        {
          // Symbols in .data.rel.ro should also be treated as read-only.
          if (obj->section_name(shndx) == ".data.rel.ro")
            is_readonly = true;
        }
    }
}

typename Sized_symbol<size>::Value_type value = sym->value();
while ((value & (addralign - 1)) != 0)
  addralign >>= 1;

// Mark the dynamic object as needed for the --as-needed option.
sym->object()->set_is_needed();

Output_data_space* dynbss;

if (is_readonly)
  {
    if (this->dynrelro_ == NULL)
      {
        this->dynrelro_ = new Output_data_space(addralign, "** dynrelro");
        layout->add_output_section_data(".data.rel.ro",
                                        elfcpp::SHT_PROGBITS,
                                        elfcpp::SHF_ALLOC | elfcpp::SHF_WRITE,
                                        this->dynrelro_, ORDER_RELRO, false);
      }
    dynbss = this->dynrelro_;
  }
else
  {
    if (this->dynbss_ == NULL)
      {
        this->dynbss_ = new Output_data_space(addralign, "** dynbss");
        layout->add_output_section_data(".bss",
                                        elfcpp::SHT_NOBITS,
```

```
                                          elfcpp::SHF_ALLOC | elfcpp::SHF_WRITE,
                                          this->dynbss_, ORDER_BSS, false);
        }
      dynbss = this->dynbss_;
    }

  if (addralign > dynbss->addralign())
    dynbss->set_space_alignment(addralign);

  section_size_type dynbss_size =
    convert_to_section_size_type(dynbss->current_data_size());
  dynbss_size = align_address(dynbss_size, addralign);
  section_size_type offset = dynbss_size;
  dynbss->set_current_data_size(dynbss_size + symsize);

  this->emit_copy_reloc(symtab, sym, dynbss, offset, reloc_section);
}

// Save a relocation to possibly be emitted later.

template<int sh_type, int size, bool big_endian>
void
Copy_relocs<sh_type, size, big_endian>::save(
    Symbol* sym,
    Sized_relobj_file<size, big_endian>* object,
    unsigned int shndx,
    Output_section* output_section,
    unsigned int r_type,
    typename elfcpp::Elf_types<size>::Elf_Addr r_offset,
    typename elfcpp::Elf_types<size>::Elf_Swxword r_addend)
{
  this->entries_.push_back(Copy_reloc_entry(sym, r_type, object, shndx,
                                            output_section, r_offset,
                                            r_addend));
}

// Emit any saved relocs.

template<int sh_type, int size, bool big_endian>
void
Copy_relocs<sh_type, size, big_endian>::emit(
    Output_data_reloc<sh_type, true, size, big_endian>* reloc_section)
{
  for (typename Copy_reloc_entries::iterator p = this->entries_.begin();
       p != this->entries_.end();
       ++p)
    {
      Copy_reloc_entry& entry = *p;

      // If the symbol is no longer defined in a dynamic object, then we
      // emitted a COPY relocation, and we do not want to emit this
      // dynamic relocation.
      if (entry.sym_->is_from_dynobj())
        reloc_section->add_global_generic(entry.sym_, entry.reloc_type_,
                                          entry.output_section_, entry.relobj_,
                                          entry.shndx_, entry.address_,
                                          entry.addend_);
    }
```

```
  // We no longer need the saved information.
  this->entries_.clear();
}

// Instantiate the templates we need.

#ifdef HAVE_TARGET_32_LITTLE
template
class Copy_relocs<elfcpp::SHT_REL, 32, false>;

template
class Copy_relocs<elfcpp::SHT_RELA, 32, false>;
#endif

#ifdef HAVE_TARGET_32_BIG
template
class Copy_relocs<elfcpp::SHT_REL, 32, true>;

template
class Copy_relocs<elfcpp::SHT_RELA, 32, true>;
#endif

#ifdef HAVE_TARGET_64_LITTLE
template
class Copy_relocs<elfcpp::SHT_REL, 64, false>;

template
class Copy_relocs<elfcpp::SHT_RELA, 64, false>;
#endif

#ifdef HAVE_TARGET_64_BIG
template
class Copy_relocs<elfcpp::SHT_REL, 64, true>;

template
class Copy_relocs<elfcpp::SHT_RELA, 64, true>;
#endif

} // End namespace gold.
----------------------------------------------------------------------
binutils/gold/testsuite/copy_test_relro_1.cc
----------------------------------------------------------------------
// copy_test_relro_1.cc -- test copy relocs variables for gold

// Copyright (C) 2016-2017 Free Software Foundation, Inc.
// Written by Cary Coutant <ccoutant@gmail.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
```

```
// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

extern int a;

extern int* const p;
extern const int b[];
extern const int c;
extern const int* const q;

int* const p = &a;

const int b[] = { 100, 200, 300, 400 };

const int c = 500;

const int* const q = &c;
----------------------------------------------------------------------
binutils/gold/testsuite/copy_test.cc
----------------------------------------------------------------------
// copy_test.cc -- test copy relocs for gold

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
// Written by Ian Lance Taylor <iant@google.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

#include <cassert>
#include <stdint.h>

// Misalign the BSS section.
static char c;

// From copy_test_1.cc.
extern char b;

// From copy_test_2.cc.
extern long long l;
extern int ip; // protected visibility; may not be copied

int* ipp = &ip;
```

```
int
main()
{
  assert(c == 0);
  assert(b == 1);
  assert(l == 2);
  assert((reinterpret_cast<uintptr_t>(&l) & 0x7) == 0);
  assert(*ipp == 3);
  return 0;
}
----------------------------------------------------------------
binutils/gold/testsuite/copy_test_protected.sh
----------------------------------------------------------------
#!/bin/sh

# copy_test_protected.sh -- a test case for copy relocations.

# Copyright (C) 2016-2017 Free Software Foundation, Inc.
# Written by Cary Coutant <ccoutant@gmail.com>.

# This file is part of gold.

# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 3 of the License, or
# (at your option) any later version.

# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
# GNU General Public License for more details.

# You should have received a copy of the GNU General Public License
# along with this program; if not, write to the Free Software
# Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
# MA 02110-1301, USA.

check()
{
    if ! grep -q "$2" "$1"
    then
        echo "Did not find expected error in $1:"
        echo "   $2"
        echo ""
        echo "Actual error output below:"
        cat "$1"
        exit 1
    fi
}

check copy_test_protected.err "protected symbol .ip."

exit 0
----------------------------------------------------------------
binutils/gold/testsuite/copy_test_2.cc
----------------------------------------------------------------
// copy_test_2.cc -- test copy relocs variables for gold

// Copyright (C) 2008-2018 Free Software Foundation, Inc.
```

```
// Written by Ian Lance Taylor <iant@google.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

long long l = 2;

int ip __attribute__((visibility("protected"))) = 3;
----------------------------------------------------------------
binutils/gold/testsuite/copy_test_relro.cc
----------------------------------------------------------------
// copy_test_relro.cc -- test copy relocs against read-only and relro symbols.

// Copyright (C) 2016-2017 Free Software Foundation, Inc.
// Written by Cary Coutant <ccoutant@gmail.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

#include <cassert>
#include <stdint.h>
#include <signal.h>
#include <setjmp.h>

extern int* const p;
extern const int b[];
extern const int* const q;
extern const int c;
int a = 123;

extern const int* const cp __attribute__ ((section (".rodata"))) = &c;
```

```
extern const int* const* const qp __attribute__ ((section (".rodata"))) = &q;

volatile int segfaults = 0;
sigjmp_buf jmp;

void segv(int)
{
  ++segfaults;
  siglongjmp(jmp, 1);
}

int main()
{
  assert(*p == 123);
  assert(b[0] == 100);
  assert(b[1] == 200);
  assert(b[2] == 300);
  assert(b[3] == 400);
  assert(c == 500);

  struct sigaction act;
  act.sa_handler = segv;
  sigemptyset(&act.sa_mask);
  act.sa_flags = 0;
  sigaction(SIGSEGV, &act, 0);

  assert(segfaults == 0);
  if (sigsetjmp(jmp, 1) == 0)
    *const_cast<const int **>(&p) = &c;
  assert(segfaults == 1);
  if (sigsetjmp(jmp, 1) == 0)
    *const_cast<int *>(b) = 99;
  assert(segfaults == 2);
  if (sigsetjmp(jmp, 1) == 0)
    *const_cast<int *>(cp) = c - 1;
  assert(segfaults == 3);
  if (sigsetjmp(jmp, 1) == 0)
    *const_cast<int **>(qp) = &a;
  assert(segfaults == 4);

  return 0;
}
----------------------------------------------------------------------
binutils/gold/testsuite/copy_test_protected.cc
----------------------------------------------------------------------
// copy_test_protected.cc -- test copy relocs for gold

// Copyright (C) 2016-2017 Free Software Foundation, Inc.
// Written by Cary Coutant <ccoutant@gmail.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
```

```
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

#include <cassert>
#include <stdint.h>

// From copy_test_2.cc.
extern int ip; // protected visibility; may not be copied

int
main()
{
  // This should produce a link-time error because we cannot
  // create a copy relocation to a protected symbol.
  assert(ip == 3);
  return 0;
}
----------------------------------------------------------------
binutils/gold/testsuite/copy_test_v1.cc
----------------------------------------------------------------
// copy_test_v1.cc -- test copy relocs for gold

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
// Written by Ian Lance Taylor <iant@google.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

// This source file is used for testing the --incremental option.
// The object built from this source will be incrementally updated
// with the correct object built from copy_test.cc.

#include <cassert>
#include <stdint.h>

// Misalign the BSS section.
static char c;

// From copy_test_1.cc.
extern char b;
```

```
// From copy_test_2.cc.
extern long long l;
extern int ip; // protected visibility; may not be copied

int* ipp = &ip;

int
main()
{
  assert(c == 0);
  assert(b == 1);
  assert(l == 3);       // Deliberately incorrect.
  assert((reinterpret_cast<uintptr_t>(&l) & 0x7) == 0);
  assert(*ipp == 3);
  return 0;
}
----------------------------------------------------------------------
binutils/gold/testsuite/copy_test_1.cc
----------------------------------------------------------------------
// copy_test_1.cc -- test copy relocs for gold

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
// Written by Ian Lance Taylor <iant@google.com>.

// This file is part of gold.

// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License as published by
// the Free Software Foundation; either version 3 of the License, or
// (at your option) any later version.

// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License
// along with this program; if not, write to the Free Software
// Foundation, Inc., 51 Franklin Street - Fifth Floor, Boston,
// MA 02110-1301, USA.

char b = 1;
----------------------------------------------------------------------
binutils/include/COPYING3
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
```

to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to

produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

  When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or

modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,

in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

```
    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
```

your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a

covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS

```
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".
```

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs. If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License. But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----
binutils/include/COPYING

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free

software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include

anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is

implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER

PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year  name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.
----
binutils/zlib/contrib/dotzlib/LICENSE_1_0.txt

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.---
binutils/COPYING

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it

in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty;

and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

```
    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.


  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
```

otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
binutils/COPYING3.LIB
----------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library.  The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".
```

```
  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library.  You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.
```

b) Accompany the Combined Work with a copy of the GNU GPL and this license document.

c) For a Combined Work that displays copyright notices during execution, include the copyright notice for the Library among these notices, as well as a reference directing the user to the copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this License, and the Corresponding Application Code in a form suitable for, and under terms that permit, the user to recombine or relink the Application with a modified version of the Linked Version to produce a modified Combined Work, in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.

1) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (a) uses at run time a copy of the Library already present on the user's computer system, and (b) will operate properly with a modified version of the Library that is interface-compatible with the Linked Version.

e) Provide Installation Information, but only if you would otherwise be required to provide such information under section 6 of the GNU GPL, and only to the extent that such information is necessary to install and execute a modified version of the Combined Work produced by recombining or relinking the Application with a modified version of the Linked Version. (If you use option 4d0, the Installation Information must accompany the Minimal Corresponding Source and Corresponding Application Code. If you use option 4d1, you must provide the Installation Information in the manner specified by section 6 of the GNU GPL for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the Library side by side in a single library together with other library facilities that are not Applications and are not covered by this License, and convey such a combined library under terms of your choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities, conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions of the GNU Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

```
  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
---------------------------------------------------------------------
binutils/gas/COPYING
---------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
```

(1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other

parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited

permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is

```
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
```

Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

```
  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law.  If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it.  (Additional permissions may be written to require their own
removal in certain cases when you modify the work.)  You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
```

of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an

organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General

Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively

```
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
binutils/COPYING.LIB
----------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble
```

```
  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright
the library, and (2) offer you this license which gives you legal
permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain
that everyone understands that there is no warranty for this free
library.  If the library is modified by someone else and passed on, we
want its recipients to know that what they have is not the original
version, so that any problems introduced by others will not reflect on
the original authors' reputations.


  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that companies distributing free
software will individually obtain patent licenses, thus in effect
transforming the program into proprietary software.  To prevent this,
we have made it clear that any patent must be licensed for everyone's
free use or not licensed at all.

  Most GNU software, including some libraries, is covered by the ordinary
GNU General Public License, which was designed for utility programs.  This
license, the GNU Library General Public License, applies to certain
designated libraries.  This license is quite different from the ordinary
one; be sure to read it in full, and don't assume that anything in it is
the same as in the ordinary license.

  The reason we have a separate public license for some libraries is that
they blur the distinction we usually make between modifying or adding to a
```

program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

  Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

  However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

  Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on

which the executable runs, unless that component itself accompanies the executable.

  It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

  7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

    b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Library General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.

EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS

     Appendix: How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free
    Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston,
    MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
------------------------------------------------------------------
binutils/libiberty/copying-lib.texi
------------------------------------------------------------------
@node Library Copying
@appendixsec GNU LESSER GENERAL PUBLIC LICENSE

@cindex LGPL, Lesser General Public License
@center Version 2.1, February 1999

@display
Copyright @copyright{} 1991-2018 Free Software Foundation, Inc.
51 Franklin Street - Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
as the successor of the GNU Library Public License, version 2, hence the
version number 2.1.]
@end display

@appendixsubsec Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software---to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software---typically libraries---of the Free
Software Foundation and other authors who decide to use it.  You can use
it too, but we suggest you first think carefully about whether this
license or the ordinary General Public License is the better strategy to
use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of it
in new free programs; and that you are informed that you can do these
things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
```

complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

  Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the @dfn{Lesser} General Public License because it
does @emph{Less} to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

```
  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
``work based on the library'' and a ``work that uses the library''.  The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

@iftex
@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
@end iftex
@ifinfo
@center GNU LESSER GENERAL PUBLIC LICENSE
@center TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
@end ifinfo

@enumerate 0
@item
This License Agreement applies to any software library or other program
which contains a notice placed by the copyright holder or other
authorized party saying it may be distributed under the terms of this
Lesser General Public License (also called ``this License'').  Each
licensee is addressed as ``you''.

  A ``library'' means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The ``Library'', below, refers to any such software library or work
which has been distributed under these terms.  A ``work based on the
Library'' means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language.  (Hereinafter, translation is
included without limitation in the term ``modification''.)

  ``Source code'' for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.

@item
You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
```

```
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

@item
You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

@enumerate a
@item
The modified work must itself be a software library.

@item
You must cause the files modified to carry prominent notices
stating that you changed the files and the date of any change.

@item
You must cause the whole of the work to be licensed at no
charge to all third parties under the terms of this License.

@item
If a facility in the modified Library refers to a function or a
table of data to be supplied by an application program that uses
the facility, other than as an argument passed when the facility
is invoked, then you must make a good faith effort to ensure that,
in the event an application does not supply such function or
table, the facility still operates, and performs whatever part of
its purpose remains meaningful.

(For example, a function in a library to compute square roots has
a purpose that is entirely well-defined independent of the
application.  Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)
@end enumerate

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.
```

```
In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

@item
You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

@item
You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

@item
A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a ``work that uses the Library''.  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a ``work that uses the Library'' with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a ``work that uses the
library''.  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a ``work that uses the Library'' uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
```

```
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

@item
As an exception to the Sections above, you may also combine or
link a ``work that uses the Library'' with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:

@enumerate a
@item
Accompany the work with the complete corresponding
machine-readable source code for the Library including whatever
changes were used in the work (which must be distributed under
Sections 1 and 2 above); and, if the work is an executable linked
with the Library, with the complete machine-readable ``work that
uses the Library'', as object code and/or source code, so that the
user can modify the Library and then relink to produce a modified
executable containing the modified Library.  (It is understood
that the user who changes the contents of definitions files in the
Library will not necessarily be able to recompile the application
to use the modified definitions.)

@item
Use a suitable shared library mechanism for linking with the Library.  A
suitable mechanism is one that (1) uses at run time a copy of the
library already present on the user's computer system, rather than
copying library functions into the executable, and (2) will operate
properly with a modified version of the library, if the user installs
one, as long as the modified version is interface-compatible with the
version that the work was made with.

@item
Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

@item
If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.
```

```
@item
Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.
@end enumerate

  For an executable, the required form of the ``work that uses the
Library'' must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies the
executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

@item
You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

@enumerate a
@item
Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities.  This must be distributed under the terms of the
Sections above.

@item
Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.
@end enumerate

@item
You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

@item
You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.
```

@item
Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.

@item
If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

@item
If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

@item
The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and

```
``any later version'', you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation.  If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

@item
If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission.  For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this.  Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

@center NO WARRANTY

@item
BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY ``AS IS'' WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU.  SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item
IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.
@end enumerate

@iftex
@heading END OF TERMS AND CONDITIONS
@end iftex
@ifinfo
@center END OF TERMS AND CONDITIONS
@end ifinfo

@page
@appendixsubsec How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
```

```
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
``copyright'' line and a pointer to where the full notice is found.

@smallexample
@var{one line to give the library's name and an idea of what it does.}
Copyright (C) @var{year}  @var{name of author}

This library is free software; you can redistribute it and/or modify it
under the terms of the GNU Lesser General Public License as published by
the Free Software Foundation; either version 2.1 of the License, or (at
your option) any later version.

This library is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301,
USA.
@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a ``copyright disclaimer'' for the library, if
necessary.  Here is a sample; alter the names:

@smallexample
Yoyodyne, Inc., hereby disclaims all copyright interest in the library
`Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990
Ty Coon, President of Vice
@end smallexample

That's all there is to it!
---------------------------------------------------------------------
binutils/libiberty/copysign.c
---------------------------------------------------------------------
#include <ansidecl.h>

#ifdef __IEEE_BIG_ENDIAN

typedef union
{
  double value;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 11;
    unsigned int fraction0:4;
    unsigned int fraction1:16;
    unsigned int fraction2:16;
    unsigned int fraction3:16;

  } number;
```

```
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 11;
    unsigned int quiet:1;
    unsigned int function0:3;
    unsigned int function1:16;
    unsigned int function2:16;
    unsigned int function3:16;
  } nan;
  struct
  {
    unsigned long msw;
    unsigned long lsw;
  } parts;
    long aslong[2];
} __ieee_double_shape_type;

#endif

#ifdef __IEEE_LITTLE_ENDIAN

typedef union
{
  double value;
  struct
  {
#ifdef __SMALL_BITFIELDS
    unsigned int fraction3:16;
    unsigned int fraction2:16;
    unsigned int fraction1:16;
    unsigned int fraction0: 4;
#else
    unsigned int fraction1:32;
    unsigned int fraction0:20;
#endif
    unsigned int exponent :11;
    unsigned int sign     : 1;
  } number;
  struct
  {
#ifdef __SMALL_BITFIELDS
    unsigned int function3:16;
    unsigned int function2:16;
    unsigned int function1:16;
    unsigned int function0:3;
#else
    unsigned int function1:32;
    unsigned int function0:19;
#endif
    unsigned int quiet:1;
    unsigned int exponent: 11;
    unsigned int sign : 1;
  } nan;
  struct
  {
    unsigned long lsw;
    unsigned long msw;
  } parts;
```

```
  long aslong[2];

} __ieee_double_shape_type;

#endif

#ifdef __IEEE_BIG_ENDIAN
typedef union
{
  float value;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 8;
    unsigned int fraction0: 7;
    unsigned int fraction1: 16;
  } number;
  struct
  {
    unsigned int sign:1;
    unsigned int exponent:8;
    unsigned int quiet:1;
    unsigned int function0:6;
    unsigned int function1:16;
  } nan;
  long p1;

} __ieee_float_shape_type;
#endif

#ifdef __IEEE_LITTLE_ENDIAN
typedef union
{
  float value;
  struct
  {
    unsigned int fraction0: 7;
    unsigned int fraction1: 16;
    unsigned int exponent: 8;
    unsigned int sign : 1;
  } number;
  struct
  {
    unsigned int function1:16;
    unsigned int function0:6;
    unsigned int quiet:1;
    unsigned int exponent:8;
    unsigned int sign:1;
  } nan;
  long p1;

} __ieee_float_shape_type;
#endif

#if defined(__IEEE_BIG_ENDIAN) || defined(__IEEE_LITTLE_ENDIAN)

double
copysign (double x, double y)
```

```
{
  __ieee_double_shape_type a,b;
  b.value = y;
  a.value = x;
  a.number.sign =b.number.sign;
  return a.value;
}

#else

double
copysign (double x, double y)
{
  if ((x < 0 && y > 0) || (x > 0 && y < 0))
    return -x;
  return x;
}

#endif
----------------------------------------------------------------------
binutils/libiberty/COPYING.LIB
----------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
```

you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact

all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

  You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

    (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public

License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally

accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

  7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

    b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE

LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS

           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!

3.9 bison

```
bison
-----------------------------------------------------------------------
bison/COPYING
-----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.10 busybox

```
busybox
----------------------------------------------------------------------
busybox/archival/libarchive/bz/LICENSE
----------------------------------------------------------------------
bzip2 applet in busybox is based on lightly-modified source
of bzip2 version 1.0.4. bzip2 source is distributed
under the following conditions (copied verbatim from LICENSE file)
============================================================


This program, "bzip2", the associated library "libbzip2", and all
documentation, are copyright (C) 1996-2006 Julian R Seward.  All
rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must
   not claim that you wrote the original software.  If you use this
   software in a product, an acknowledgment in the product
   documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must
   not be misrepresented as being the original software.

4. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior written
   permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, Cambridge, UK.
jseward@bzip.org
bzip2/libbzip2 version 1.0.4 of 20 December 2006
----------------------------------------------------------------------
busybox/LICENSE
----------------------------------------------------------------------
--- A note on GPL versions

BusyBox is distributed under version 2 of the General Public License (included
in its entirety, below).  Version 2 is the only version of this license which
```

this version of BusyBox (or modified versions derived from this one) may be
distributed under.

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

```
  The precise terms and conditions for copying, distribution and
modification follow.


                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)
```

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
busybox/libbb/copyfd.c
----------------------------------------------------------------------
/* vi: set sw=4 ts=4: */
/*
```

```
 * Utility routines.
 *
 * Copyright (C) 1999-2005 by Erik Andersen <andersen@codepoet.org>
 *
 * Licensed under GPLv2 or later, see file LICENSE in this source tree.
 */
#include "libbb.h"
#if ENABLE_FEATURE_USE_SENDFILE
# include <sys/sendfile.h>
#else
# define sendfile(a,b,c,d) (-1)
#endif

/*
 * We were using 0x7fff0000 as sendfile chunk size, but it
 * was seen to cause largish delays when user tries to ^C a file copy.
 * Let's use a saner size.
 * Note: needs to be >= max(CONFIG_FEATURE_COPYBUF_KB),
 * or else "copy to eof" code will use neddlesly short reads.
 */
#define SENDFILE_BIGBUF (16*1024*1024)

/* Used by NOFORK applets (e.g. cat) - must not use xmalloc.
 * size < 0 means "ignore write errors", used by tar --to-command
 * size = 0 means "copy till EOF"
 */
static off_t bb_full_fd_action(int src_fd, int dst_fd, off_t size)
{
        int status = -1;
        off_t total = 0;
        bool continue_on_write_error = 0;
        ssize_t sendfile_sz;
#if CONFIG_FEATURE_COPYBUF_KB > 4
        char *buffer = buffer; /* for compiler */
        int buffer_size = 0;
#else
        char buffer[CONFIG_FEATURE_COPYBUF_KB * 1024];
        enum { buffer_size = sizeof(buffer) };
#endif

        if (size < 0) {
                size = -size;
                continue_on_write_error = 1;
        }

        if (src_fd < 0)
                goto out;

        sendfile_sz = !ENABLE_FEATURE_USE_SENDFILE
                ? 0
                : SENDFILE_BIGBUF;
        if (!size) {
                size = SENDFILE_BIGBUF;
                status = 1; /* copy until eof */
        }

        while (1) {
                ssize_t rd;
```

```
                if (sendfile_sz) {
                        rd = sendfile(dst_fd, src_fd, NULL,
                                size > sendfile_sz ? sendfile_sz : size);
                        if (rd >= 0)
                                goto read_ok;
                        sendfile_sz = 0; /* do not try sendfile anymore */
                }
#if CONFIG_FEATURE_COPYBUF_KB > 4
                if (buffer_size == 0) {
                        if (size > 0 && size <= 4 * 1024)
                                goto use_small_buf;
                        /* We want page-aligned buffer, just in case kernel is clever
                         * and can do page-aligned io more efficiently */
                        buffer = mmap(NULL, CONFIG_FEATURE_COPYBUF_KB * 1024,
                                        PROT_READ | PROT_WRITE,
                                        MAP_PRIVATE | MAP_ANON,
                                        /* ignored: */ -1, 0);
                        buffer_size = CONFIG_FEATURE_COPYBUF_KB * 1024;
                        if (buffer == MAP_FAILED) {
 use_small_buf:
                                buffer = alloca(4 * 1024);
                                buffer_size = 4 * 1024;
                        }
                }
#endif
                rd = safe_read(src_fd, buffer,
                        size > buffer_size ? buffer_size : size);
                if (rd < 0) {
                        bb_perror_msg(bb_msg_read_error);
                        break;
                }
 read_ok:
                if (!rd) { /* eof - all done */
                        status = 0;
                        break;
                }
                /* dst_fd == -1 is a fake, else... */
                if (dst_fd >= 0 && !sendfile_sz) {
                        ssize_t wr = full_write(dst_fd, buffer, rd);
                        if (wr < rd) {
                                if (!continue_on_write_error) {
                                        bb_perror_msg(bb_msg_write_error);
                                        break;
                                }
                                dst_fd = -1;
                        }
                }
                total += rd;
                if (status < 0) { /* if we aren't copying till EOF... */
                        size -= rd;
                        if (!size) {
                                /* 'size' bytes copied - all done */
                                status = 0;
                                break;
                        }
                }
        }
 out:
```

```
/* some environments don't have munmap(), hide it in #if */
#if CONFIG_FEATURE_COPYBUF_KB > 4
        if (buffer_size > 4 * 1024)
                munmap(buffer, buffer_size);
#endif
        return status ? -1 : total;
}


#if 0
void FAST_FUNC complain_copyfd_and_die(off_t sz)
{
        if (sz != -1)
                bb_error_msg_and_die("short read");
        /* if sz == -1, bb_copyfd_XX already complained */
        xfunc_die();
}
#endif

off_t FAST_FUNC bb_copyfd_size(int fd1, int fd2, off_t size)
{
        if (size) {
                return bb_full_fd_action(fd1, fd2, size);
        }
        return 0;
}

void FAST_FUNC bb_copyfd_exact_size(int fd1, int fd2, off_t size)
{
        off_t sz = bb_copyfd_size(fd1, fd2, size);
        if (sz == (size >= 0 ? size : -size))
                return;
        if (sz != -1)
                bb_error_msg_and_die("short read");
        /* if sz == -1, bb_copyfd_XX already complained */
        xfunc_die();
}

off_t FAST_FUNC bb_copyfd_eof(int fd1, int fd2)
{
        return bb_full_fd_action(fd1, fd2, 0);
}
----------------------------------------------------------------
busybox/libbb/copy_file.c
----------------------------------------------------------------
/* vi: set sw=4 ts=4: */
/*
 * Mini copy_file implementation for busybox
 *
 * Copyright (C) 2001 by Matt Kraai <kraai@alumni.carnegiemellon.edu>
 * SELinux support by Yuichi Nakamura <ynakam@hitachisoft.jp>
 *
 * Licensed under GPLv2 or later, see file LICENSE in this source tree.
 */
#include "libbb.h"

// FEATURE_NON_POSIX_CP:
//
// POSIX: if exists and -i, ask (w/o -i assume yes).
```

```
// Then open w/o EXCL (yes, not unlink!).
// If open still fails and -f, try unlink, then try open again.
// Result: a mess:
// If dest is a (sym)link, we overwrite link destination!
// (or fail, if it points to dir/nonexistent location/etc).
// This is strange, but POSIX-correct.
// coreutils cp has --remove-destination to override this...

/* Called if open of destination, link creation etc fails.
 * errno must be set to relevant value ("why we cannot create dest?")
 * to give reasonable error message */
static int ask_and_unlink(const char *dest, int flags)
{
        int e = errno;

#if !ENABLE_FEATURE_NON_POSIX_CP
        if (!(flags & (FILEUTILS_FORCE|FILEUTILS_INTERACTIVE))) {
                /* Either it exists, or the *path* doesnt exist */
                bb_perror_msg("can't create '%s'", dest);
                return -1;
        }
#endif
        // else: act as if -f is always in effect.
        // We don't want "can't create" msg, we want unlink to be done
        // (silently unless -i). Why? POSIX cp usually succeeds with
        // O_TRUNC open of existing file, and user is left ignorantly happy.
        // With above block unconditionally enabled, non-POSIX cp
        // will complain a lot more than POSIX one.

        /* TODO: maybe we should do it only if ctty is present? */
        if (flags & FILEUTILS_INTERACTIVE) {
                // We would not do POSIX insanity. -i asks,
                // then _unlinks_ the offender. Presto.
                // (No "opening without O_EXCL", no "unlink only if -f")
                // Or else we will end up having 3 open()s!
                fprintf(stderr, "%s: overwrite '%s'? ", applet_name, dest);
                if (!bb_ask_confirmation())
                        return 0; /* not allowed to overwrite */
        }
        if (unlink(dest) < 0) {
#if ENABLE_FEATURE_VERBOSE_CP_MESSAGE
                if (e == errno && e == ENOENT) {
                        /* e == ENOTDIR is similar: path has non-dir component,
                         * but in this case we don't even reach copy_file() */
                        bb_error_msg("can't create '%s': Path does not exist", dest);
                        return -1; /* error */
                }
#endif
                errno = e; /* do not use errno from unlink */
                bb_perror_msg("can't create '%s'", dest);
                return -1; /* error */
        }
#if ENABLE_FEATURE_CP_LONG_OPTIONS
        if (flags & FILEUTILS_RMDEST)
                if (flags & FILEUTILS_VERBOSE)
                        printf("removed '%s'\n", dest);
#endif
        return 1; /* ok (to try again) */
}
```

```
/* Return:
 * -1 error, copy not made
 *  0 copy is made or user answered "no" in interactive mode
 *    (failures to preserve mode/owner/times are not reported in exit code)
 */
int FAST_FUNC copy_file(const char *source, const char *dest, int flags)
{
        /* This is a recursive function, try to minimize stack usage */
        /* NB: each struct stat is ~100 bytes */
        struct stat source_stat;
        struct stat dest_stat;
        smallint retval = 0;
        smallint dest_exists = 0;
        smallint ovr;

/* Inverse of cp -d ("cp without -d") */
#define FLAGS_DEREF (flags & (FILEUTILS_DEREFERENCE + FILEUTILS_DEREFERENCE_L0))

        if ((FLAGS_DEREF ? stat : lstat)(source, &source_stat) < 0) {
                /* This may be a dangling symlink.
                 * Making [sym]links to dangling symlinks works, so... */
                if (flags & (FILEUTILS_MAKE_SOFTLINK|FILEUTILS_MAKE_HARDLINK))
                        goto make_links;
                bb_perror_msg("can't stat '%s'", source);
                return -1;
        }

        if (lstat(dest, &dest_stat) < 0) {
                if (errno != ENOENT) {
                        bb_perror_msg("can't stat '%s'", dest);
                        return -1;
                }
        } else {
                if (source_stat.st_dev == dest_stat.st_dev
                 && source_stat.st_ino == dest_stat.st_ino
                ) {
                        bb_error_msg("'%s' and '%s' are the same file", source, dest);
                        return -1;
                }
                dest_exists = 1;
        }

#if ENABLE_SELINUX
        if ((flags & FILEUTILS_PRESERVE_SECURITY_CONTEXT) && is_selinux_enabled() > 0) {
                security_context_t con;
                if (lgetfilecon(source, &con) >= 0) {
                        if (setfscreatecon(con) < 0) {
                                bb_perror_msg("can't set setfscreatecon %s", con);
                                freecon(con);
                                return -1;
                        }
                } else if (errno == ENOTSUP || errno == ENODATA) {
                        setfscreatecon_or_die(NULL);
                } else {
                        bb_perror_msg("can't lgetfilecon %s", source);
                        return -1;
                }
        }
```

```
#endif

        if (S_ISDIR(source_stat.st_mode)) {
                DIR *dp;
                const char *tp;
                struct dirent *d;
                mode_t saved_umask = 0;

                if (!(flags & FILEUTILS_RECUR)) {
                        bb_error_msg("omitting directory '%s'", source);
                        return -1;
                }

                /* Did we ever create source ourself before? */
                tp = is_in_ino_dev_hashtable(&source_stat);
                if (tp) {
                        /* We did! it's a recursion! man the lifeboats... */
                        bb_error_msg("recursion detected, omitting directory '%s'",
                                        source);
                        return -1;
                }

                if (dest_exists) {
                        if (!S_ISDIR(dest_stat.st_mode)) {
                                bb_error_msg("target '%s' is not a directory", dest);
                                return -1;
                        }
                        /* race here: user can substitute a symlink between
                         * this check and actual creation of files inside dest */
                } else {
                        /* Create DEST */
                        mode_t mode;
                        saved_umask = umask(0);

                        mode = source_stat.st_mode;
                        if (!(flags & FILEUTILS_PRESERVE_STATUS))
                                mode = source_stat.st_mode & ~saved_umask;
                        /* Allow owner to access new dir (at least for now) */
                        mode |= S_IRWXU;
                        if (mkdir(dest, mode) < 0) {
                                umask(saved_umask);
                                bb_perror_msg("can't create directory '%s'", dest);
                                return -1;
                        }
                        umask(saved_umask);
                        /* need stat info for add_to_ino_dev_hashtable */
                        if (lstat(dest, &dest_stat) < 0) {
                                bb_perror_msg("can't stat '%s'", dest);
                                return -1;
                        }
                }
                /* remember (dev,inode) of each created dir.
                 * NULL: name is not remembered */
                add_to_ino_dev_hashtable(&dest_stat, NULL);

                /* Recursively copy files in SOURCE */
                dp = opendir(source);
                if (dp == NULL) {
                        retval = -1;
```

```
                        goto preserve_mode_ugid_time;
                }

                while ((d = readdir(dp)) != NULL) {
                        char *new_source, *new_dest;

                        new_source = concat_subpath_file(source, d->d_name);
                        if (new_source == NULL)
                                continue;
                        new_dest = concat_path_file(dest, d->d_name);
                        if (copy_file(new_source, new_dest, flags & ~FILEUTILS_DEREFERENCE_L0) < 0)
                                retval = -1;
                        free(new_source);
                        free(new_dest);
                }
                closedir(dp);

                if (!dest_exists
                 && chmod(dest, source_stat.st_mode & ~saved_umask) < 0
                ) {
                        bb_perror_msg("can't preserve %s of '%s'", "permissions", dest);
                        /* retval = -1; - WRONG! copy *WAS* made */
                }
                goto preserve_mode_ugid_time;
        }

        if (dest_exists) {
                if (flags & FILEUTILS_UPDATE) {
                        if (source_stat.st_mtime <= dest_stat.st_mtime) {
                                return 0; /* source file must be newer */
                        }
                }
#if ENABLE_FEATURE_CP_LONG_OPTIONS
                if (flags & FILEUTILS_RMDEST) {
                        ovr = ask_and_unlink(dest, flags);
                        if (ovr <= 0)
                                return ovr;
                        dest_exists = 0;
                }
#endif
        }

        if (flags & (FILEUTILS_MAKE_SOFTLINK|FILEUTILS_MAKE_HARDLINK)) {
                int (*lf)(const char *oldpath, const char *newpath);
 make_links:
                /* Hmm... maybe
                 * if (DEREF && MAKE_SOFTLINK) source = realpath(source) ?
                 * (but realpath returns NULL on dangling symlinks...) */
                lf = (flags & FILEUTILS_MAKE_SOFTLINK) ? symlink : link;
                if (lf(source, dest) < 0) {
                        ovr = ask_and_unlink(dest, flags);
                        if (ovr <= 0)
                                return ovr;
                        if (lf(source, dest) < 0) {
                                bb_perror_msg("can't create link '%s'", dest);
                                return -1;
                        }
                }
                /* _Not_ jumping to preserve_mode_ugid_time:
```

```
		 * (sym)links don't have those */
		return 0;
	}

	if (/* "cp thing1 thing2" without -R: just open and read() from thing1 */
	    !(flags & FILEUTILS_RECUR)
	    /* "cp [-opts] regular_file thing2" */
	 || S_ISREG(source_stat.st_mode)
	 /* DEREF uses stat, which never returns S_ISLNK() == true.
	  * So the below is never true: */
	 /* || (FLAGS_DEREF && S_ISLNK(source_stat.st_mode)) */
	) {
		int src_fd;
		int dst_fd;
		mode_t new_mode;

		if (!FLAGS_DEREF && S_ISLNK(source_stat.st_mode)) {
			/* "cp -d symlink dst": create a link */
			goto dont_cat;
		}

		if (ENABLE_FEATURE_PRESERVE_HARDLINKS && !FLAGS_DEREF) {
			const char *link_target;
			link_target = is_in_ino_dev_hashtable(&source_stat);
			if (link_target) {
				if (link(link_target, dest) < 0) {
					ovr = ask_and_unlink(dest, flags);
					if (ovr <= 0)
						return ovr;
					if (link(link_target, dest) < 0) {
						bb_perror_msg("can't create link '%s'", dest);
						return -1;
					}
				}
				return 0;
			}
			add_to_ino_dev_hashtable(&source_stat, dest);
		}

		src_fd = open_or_warn(source, O_RDONLY);
		if (src_fd < 0)
			return -1;

		/* Do not try to open with weird mode fields */
		new_mode = source_stat.st_mode;
		if (!S_ISREG(source_stat.st_mode))
			new_mode = 0666;

		if (ENABLE_FEATURE_NON_POSIX_CP || (flags & FILEUTILS_INTERACTIVE)) {
			/*
			 * O_CREAT|O_EXCL: require that file did not exist before creation
			 */
			dst_fd = open(dest, O_WRONLY|O_CREAT|O_EXCL, new_mode);
		} else { /* POSIX, and not "cp -i" */
			/*
			 * O_CREAT|O_TRUNC: create, or truncate (security problem versus (sym)link att
			 */
			dst_fd = open(dest, O_WRONLY|O_CREAT|O_TRUNC, new_mode);
		}
```

```
                if (dst_fd == -1) {
                        ovr = ask_and_unlink(dest, flags);
                        if (ovr <= 0) {
                                close(src_fd);
                                return ovr;
                        }
                        /* It shouldn't exist. If it exists, do not open (symlink attack?) */
                        dst_fd = open3_or_warn(dest, O_WRONLY|O_CREAT|O_EXCL, new_mode);
                        if (dst_fd < 0) {
                                close(src_fd);
                                return -1;
                        }
                }

#if ENABLE_SELINUX
                if ((flags & (FILEUTILS_PRESERVE_SECURITY_CONTEXT|FILEUTILS_SET_SECURITY_CONTEXT))
                 && is_selinux_enabled() > 0
                ) {
                        security_context_t con;
                        if (getfscreatecon(&con) == -1) {
                                bb_perror_msg("getfscreatecon");
                                return -1;
                        }
                        if (con) {
                                if (setfilecon(dest, con) == -1) {
                                        bb_perror_msg("setfilecon:%s,%s", dest, con);
                                        freecon(con);
                                        return -1;
                                }
                                freecon(con);
                        }
                }
#endif
                if (bb_copyfd_eof(src_fd, dst_fd) == -1)
                        retval = -1;
                /* Careful with writing... */
                if (close(dst_fd) < 0) {
                        bb_perror_msg("error writing to '%s'", dest);
                        retval = -1;
                }
                /* ...but read size is already checked by bb_copyfd_eof */
                close(src_fd);
                /* "cp /dev/something new_file" should not
                 * copy mode of /dev/something */
                if (!S_ISREG(source_stat.st_mode))
                        return retval;
                goto preserve_mode_ugid_time;
        }
 dont_cat:

        /* Source is a symlink or a special file */
        /* We are lazy here, a bit lax with races... */
        if (dest_exists) {
                errno = EEXIST;
                ovr = ask_and_unlink(dest, flags);
                if (ovr <= 0)
                        return ovr;
        }
        if (S_ISLNK(source_stat.st_mode)) {
```

```
                char *lpath = xmalloc_readlink_or_warn(source);
                if (lpath) {
                        int r = symlink(lpath, dest);
                        free(lpath);
                        if (r < 0) {
                                /* shared message */
                                bb_perror_msg("can't create %slink '%s' to '%s'",
                                        "sym", dest, lpath
                                );
                                return -1;
                        }
                        if (flags & FILEUTILS_PRESERVE_STATUS)
                                if (lchown(dest, source_stat.st_uid, source_stat.st_gid) < 0)
                                        bb_perror_msg("can't preserve %s of '%s'", "ownership", dest);
                }
                /* _Not_ jumping to preserve_mode_ugid_time:
                 * symlinks don't have those */
                goto verb_and_exit;
        }
        if (S_ISBLK(source_stat.st_mode) || S_ISCHR(source_stat.st_mode)
         || S_ISSOCK(source_stat.st_mode) || S_ISFIFO(source_stat.st_mode)
        ) {
                if (mknod(dest, source_stat.st_mode, source_stat.st_rdev) < 0) {
                        bb_perror_msg("can't create '%s'", dest);
                        return -1;
                }
        } else {
                bb_error_msg("unrecognized file '%s' with mode %x", source, source_stat.st_mode);
                return -1;
        }

 preserve_mode_ugid_time:

        if (flags & FILEUTILS_PRESERVE_STATUS
        /* Cannot happen: */
        /* && !(flags & (FILEUTILS_MAKE_SOFTLINK|FILEUTILS_MAKE_HARDLINK)) */
        ) {
                struct timeval times[2];

                times[1].tv_sec = times[0].tv_sec = source_stat.st_mtime;
                times[1].tv_usec = times[0].tv_usec = 0;
                /* BTW, utimes sets usec-precision time - just FYI */
                if (utimes(dest, times) < 0)
                        bb_perror_msg("can't preserve %s of '%s'", "times", dest);
                if (chown(dest, source_stat.st_uid, source_stat.st_gid) < 0) {
                        source_stat.st_mode &= ~(S_ISUID | S_ISGID);
                        bb_perror_msg("can't preserve %s of '%s'", "ownership", dest);
                }
                if (chmod(dest, source_stat.st_mode) < 0)
                        bb_perror_msg("can't preserve %s of '%s'", "permissions", dest);
        }

 verb_and_exit:
        if (flags & FILEUTILS_VERBOSE) {
                printf("'%s' -> '%s'\n", source, dest);
        }

        return retval;
}
```

3.11 bzip2

```
bzip2
--------------------------------------------------------------
bzip2/LICENSE
--------------------------------------------------------------

--------------------------------------------------------------------------

This program, "bzip2", the associated library "libbzip2", and all
documentation, are copyright (C) 1996-2010 Julian R Seward.  All
rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must
   not claim that you wrote the original software.  If you use this
   software in a product, an acknowledgment in the product
   documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must
   not be misrepresented as being the original software.

4. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior written
   permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org
bzip2/libbzip2 version 1.0.6 of 6 September 2010

--------------------------------------------------------------------------
```

3.12 check

```
check
-----------------------------------------------------------------
check/doc/example/cmake/COPYING-CMAKE-SCRIPTS.txt
-----------------------------------------------------------------
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-----------------------------------------------------------------
check/COPYING.LESSER
-----------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
        51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
```

below.

  When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

  To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General

Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

  Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

                GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote

```
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.


  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
```

threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

```
    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.


  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.
```

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free

Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Lesser General Public License for more details.
```

```
    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or
your school, if any, to sign a "copyright disclaimer" for the library,
if necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James
  Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

3.13 cmake

```
cmake
-----------------------------------------------------------------
cmake/Copyright.txt
-----------------------------------------------------------------
CMake - Cross Platform Makefile Generator
Copyright 2000-2017 Kitware, Inc. and Contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

* Neither the name of Kitware, Inc. nor the names of Contributors
  may be used to endorse or promote products derived from this
  software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

------------------------------------------------------------------------------

The following individuals and institutions are among the Contributors:

* Aaron C. Meadows <cmake@shadowguarddev.com>
* Adriaan de Groot <groot@kde.org>
* Aleksey Avdeev <solo@altlinux.ru>
* Alexander Neundorf <neundorf@kde.org>
* Alexander Smorkalov <alexander.smorkalov@itseez.com>
* Alexey Sokolov <sokolov@google.com>
* Alex Turbov <i.zaufi@gmail.com>
* Andreas Pakulat <apaku@gmx.de>
* Andreas Schneider <asn@cryptomilk.org>
* André Rigland Brodtkorb <Andre.Brodtkorb@ifi.uio.no>
* Axel Huebl, Helmholtz-Zentrum Dresden - Rossendorf
* Benjamin Eikel
* Bjoern Ricks <bjoern.ricks@gmail.com>
* Brad Hards <bradh@kde.org>
* Christopher Harvey
* Christoph Grüninger <foss@grueninger.de>
```

```
* Clement Creusot <creusot@cs.york.ac.uk>
* Daniel Blezek <blezek@gmail.com>
* Daniel Pfeifer <daniel@pfeifer-mail.de>
* Enrico Scholz <enrico.scholz@informatik.tu-chemnitz.de>
* Eran Ifrah <eran.ifrah@gmail.com>
* Esben Mose Hansen, Ange Optimization ApS
* Geoffrey Viola <geoffrey.viola@asirobots.com>
* Google Inc
* Gregor Jasny
* Helio Chissini de Castro <helio@kde.org>
* Ilya Lavrenov <ilya.lavrenov@itseez.com>
* Insight Software Consortium <insightsoftwareconsortium.org>
* Jan Woetzel
* Kelly Thompson <kgt@lanl.gov>
* Konstantin Podsvirov <konstantin@podsvirov.pro>
* Mario Bensi <mbensi@ipsquad.net>
* Mathieu Malaterre <mathieu.malaterre@gmail.com>
* Matthaeus G. Chajdas
* Matthias Kretz <kretz@kde.org>
* Matthias Maennich <matthias@maennich.net>
* Michael Stürmer
* Miguel A. Figueroa-Villanueva
* Mike Jackson
* Mike McQuaid <mike@mikemcquaid.com>
* Nicolas Bock <nicolasbock@gmail.com>
* Nicolas Despres <nicolas.despres@gmail.com>
* Nikita Krupen'ko <krnekit@gmail.com>
* NVIDIA Corporation <www.nvidia.com>
* OpenGamma Ltd. <opengamma.com>
* Per Øyvind Karlsen <peroyvind@mandriva.org>
* Peter Collingbourne <peter@pcc.me.uk>
* Petr Gotthard <gotthard@honeywell.com>
* Philip Lowman <philip@yhbt.com>
* Philippe Proulx <pproulx@efficios.com>
* Raffi Enficiaud, Max Planck Society
* Raumfeld <raumfeld.com>
* Roger Leigh <rleigh@codelibre.net>
* Rolf Eike Beer <eike@sf-mail.de>
* Roman Donchenko <roman.donchenko@itseez.com>
* Roman Kharitonov <roman.kharitonov@itseez.com>
* Ruslan Baratov
* Sebastian Holtermann <sebholt@xwmw.org>
* Stephen Kelly <steveire@gmail.com>
* Sylvain Joubert <joubert.sy@gmail.com>
* Thomas Sondergaard <ts@medical-insight.com>
* Tobias Hunger <tobias.hunger@qt.io>
* Todd Gamblin <tgamblin@llnl.gov>
* Tristan Carel
* University of Dundee
* Vadim Zhukov
* Will Dicharry <wdicharry@stellarscience.com>

See version control history for details of individual contributions.

The above copyright and license notice applies to distributions of
CMake in source and binary form.  Third-party software packages supplied
with CMake under compatible licenses provide their own copyright notices
documented in corresponding subdirectories or source files.
```

```
------------------------------------------------------------------------------

CMake was initially developed by Kitware with the following sponsorship:

 * National Library of Medicine at the National Institutes of Health
   as part of the Insight Segmentation and Registration Toolkit (ITK).

 * US National Labs (Los Alamos, Livermore, Sandia) ASC Parallel
   Visualization Initiative.

 * National Alliance for Medical Image Computing (NAMIC) is funded by the
   National Institutes of Health through the NIH Roadmap for Medical Research,
   Grant U54 EB005149.

 * Kitware, Inc.
--------------------------------------------------------------------------
cmake/Licenses/
--------------------------------------------------------------------------
--------------------------------------------------------------------------
cmake/Licenses/README.rst
--------------------------------------------------------------------------
Licenses
========

The CMake source tree is distributed under terms of the BSD 3-Clause license.

This directory contains other license files that need to be packaged with
binary distributions when certain third-party libraries are included.
--------------------------------------------------------------------------
cmake/Licenses/LGPLv3.txt
--------------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library.  The particular version of the Library
```

with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library. You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that

```
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
   GNU GPL, and only to the extent that such information is
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
   the Minimal Corresponding Source and Corresponding Application
   Code. If you use option 4d1, you must provide the Installation
   Information in the manner specified by section 6 of the GNU GPL
   for conveying Corresponding Source.)

  5. Combined Libraries.

  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

   a) Accompany the combined library with a copy of the same work based
   on the Library, uncombined with any other library facilities,
   conveyed under the terms of this License.

   b) Give prominent notice with the combined library that part of it
   is a work based on the Library, and explaining where to find the
   accompanying uncombined form of the same work.

  6. Revised Versions of the GNU Lesser General Public License.

  The Free Software Foundation may publish revised and/or new versions
```

of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----
cmake/Licenses/LGPLv2.1.txt

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for

you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact

```
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.


  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
```

License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

```
  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library.  (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library.  A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
```

accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

  7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

    b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE

LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS

           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

```
That's all there is to it!
---------------------------------------------------------------------
cmake/Utilities/cmcurl/COPYING
---------------------------------------------------------------------
COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2017, Daniel Stenberg, <daniel@haxx.se>, and many
contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose
with or without fee is hereby granted, provided that the above copyright
notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN
NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not
be used in advertising or otherwise to promote the sale, use or other dealings
in this Software without prior written authorization of the copyright holder.
---------------------------------------------------------------------
cmake/Utilities/cmlibarchive/COPYING
---------------------------------------------------------------------
The libarchive distribution as a whole is Copyright by Tim Kientzle
and is subject to the copyright notice reproduced at the bottom of
this file.

Each individual file in this distribution should have a clear
copyright/licensing statement at the beginning of the file.  If any do
not, please let me know and I will rectify it.  The following is
intended to summarize the copyright status of the individual files;
the actual statements in the files are controlling.

* Except as listed below, all C sources (including .c and .h files)
  and documentation files are subject to the copyright notice reproduced
  at the bottom of this file.

* The following source files are also subject in whole or in part to
  a 3-clause UC Regents copyright; please read the individual source
  files for details:
   libarchive/archive_entry.c
   libarchive/archive_read_support_filter_compress.c
   libarchive/archive_write_add_filter_compress.c
   libarchive/mtree.5

* The following source files are in the public domain:
   libarchive/archive_getdate.c

* The build files---including Makefiles, configure scripts,
  and auxiliary scripts used as part of the compile process---have
  widely varying licensing terms.  Please check individual files before
  distributing them to see if those restrictions apply to you.
```

```
I intend for all new source code to use the license below and hope over
time to replace code with other licenses with new implementations that
do use the license below.  The varying licensing of the build scripts
seems to be an unavoidable mess.


Copyright (c) 2003-2009 <author(s)>
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer
   in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR(S) ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------
cmake/Utilities/cmlibrhash/COPYING
-------------------------------------------------------------------

                                RHash License

Copyright (c) 2005-2014 Aleksey Kravchenko <rhash.admin@gmail.com>

Permission is hereby granted, free of charge,  to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction,  including without limitation the rights
to  use,  copy,  modify,  merge, publish, distribute, sublicense, and/or sell
copies  of  the Software,  and  to permit  persons  to whom  the Software  is
furnished to do so.

The Software  is distributed in the hope that it will be useful,  but WITHOUT
ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS
FOR A PARTICULAR PURPOSE.  Use  this  program  at  your  own  risk!
-------------------------------------------------------------------
cmake/Utilities/KWIML/Copyright.txt
-------------------------------------------------------------------
Kitware Information Macro Library
Copyright 2010-2016 Kitware, Inc.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

* Redistributions of source code must retain the above copyright
```

```
  notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

* Neither the name of Kitware, Inc. nor the names of its contributors
  may be used to endorse or promote products derived from this
  software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------
cmake/Utilities/cmzlib/Copyright.txt
-------------------------------------------------------------------
'zlib' general purpose compression library
version 1.2.3, July 18th, 2005

Copyright (C) 1995-2005 Jean-loup Gailly and Mark Adler

This software is provided 'as-is', without any express or implied
warranty.  In no event will the authors be held liable for any damages
arising from the use of this software.

Permission is granted to anyone to use this software for any purpose,
including commercial applications, and to alter it and redistribute it
freely, subject to the following restrictions:

1. The origin of this software must not be misrepresented; you must not
   claim that you wrote the original software. If you use this software
   in a product, an acknowledgment in the product documentation would be
   appreciated but is not required.
2. Altered source versions must be plainly marked as such, and must not be
   misrepresented as being the original software.
3. This notice may not be removed or altered from any source distribution.

Jean-loup Gailly        Mark Adler
jloup@gzip.org          madler@alumni.caltech.edu
-------------------------------------------------------------------
cmake/Utilities/cmbzip2/LICENSE
-------------------------------------------------------------------

--------------------------------------------------------------------------

This program, "bzip2", the associated library "libbzip2", and all
documentation, are copyright (C) 1996-2007 Julian R Seward.  All
rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
```

```
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must
   not claim that you wrote the original software.  If you use this
   software in a product, an acknowledgment in the product
   documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must
   not be misrepresented as being the original software.

4. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior written
   permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org
bzip2/libbzip2 version 1.0.5 of 10 December 2007

--------------------------------------------------------------------------------
----------------------------------------------------------------
cmake/Utilities/cmliblzma/COPYING
----------------------------------------------------------------

XZ Utils Licensing
==================

    Different licenses apply to different files in this package. Here
    is a rough summary of which licenses apply to which parts of this
    package (but check the individual files to be sure!):

      - liblzma is in the public domain.

      - xz, xzdec, and lzmadec command line tools are in the public
        domain unless GNU getopt_long had to be compiled and linked
        in from the lib directory. The getopt_long code is under
        GNU LGPLv2.1+.

      - The scripts to grep, diff, and view compressed files have been
        adapted from gzip. These scripts and their documentation are
        under GNU GPLv2+.

      - All the documentation in the doc directory and most of the
        XZ Utils specific documentation files in other directories
        are in the public domain.
```

```
      - Translated messages are in the public domain.

      - The build system contains public domain files, and files that
        are under GNU GPLv2+ or GNU GPLv3+. None of these files end up
        in the binaries being built.

      - Test files and test code in the tests directory, and debugging
        utilities in the debug directory are in the public domain.

      - The extra directory may contain public domain files, and files
        that are under various free software licenses.

    You can do whatever you want with the files that have been put into
    the public domain. If you find public domain legally problematic,
    take the previous sentence as a license grant. If you still find
    the lack of copyright legally problematic, you have too many
    lawyers.

    As usual, this software is provided "as is", without any warranty.

    If you copy significant amounts of public domain code from XZ Utils
    into your project, acknowledging this somewhere in your software is
    polite (especially if it is proprietary, non-free software), but
    naturally it is not legally required. Here is an example of a good
    notice to put into "about box" or into documentation:

        This software includes code from XZ Utils <http://tukaani.org/xz/>.

    The following license texts are included in the following files:
      - COPYING.LGPLv2.1: GNU Lesser General Public License version 2.1
      - COPYING.GPLv2: GNU General Public License version 2
      - COPYING.GPLv3: GNU General Public License version 3

    Note that the toolchain (compiler, linker etc.) may add some code
    pieces that are copyrighted. Thus, it is possible that e.g. liblzma
    binary wouldn't actually be in the public domain in its entirety
    even though it contains no copyrighted code from the XZ Utils source
    package.

    If you have questions, don't hesitate to ask the author(s) for more
    information.

------------------------------------------------------------------
cmake/Utilities/GitSetup/LICENSE
------------------------------------------------------------------

                                 Apache License
                           Version 2.0, January 2004
                        http://www.apache.org/licenses/

   TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

   1. Definitions.

      "License" shall mean the terms and conditions for use, reproduction,
      and distribution as defined by Sections 1 through 9 of this document.

      "Licensor" shall mean the copyright owner or entity authorized by
      the copyright owner that is granting the License.
```

"Legal Entity" shall mean the union of the acting entity and all
other entities that control, are controlled by, or are under common
control with that entity. For the purposes of this definition,
"control" means (i) the power, direct or indirect, to cause the
direction or management of such entity, whether by contract or
otherwise, or (ii) ownership of fifty percent (50%) or more of the
outstanding shares, or (iii) beneficial ownership of such entity.

"You" (or "Your") shall mean an individual or Legal Entity
exercising permissions granted by this License.

"Source" form shall mean the preferred form for making modifications,
including but not limited to software source code, documentation
source, and configuration files.

"Object" form shall mean any form resulting from mechanical
transformation or translation of a Source form, including but
not limited to compiled object code, generated documentation,
and conversions to other media types.

"Work" shall mean the work of authorship, whether in Source or
Object form, made available under the License, as indicated by a
copyright notice that is included in or attached to the work
(an example is provided in the Appendix below).

"Derivative Works" shall mean any work, whether in Source or Object
form, that is based on (or derived from) the Work and for which the
editorial revisions, annotations, elaborations, or other modifications
represent, as a whole, an original work of authorship. For the purposes
of this License, Derivative Works shall not include works that remain
separable from, or merely link (or bind by name) to the interfaces of,
the Work and Derivative Works thereof.

"Contribution" shall mean any work of authorship, including
the original version of the Work and any modifications or additions
to that Work or Derivative Works thereof, that is intentionally
submitted to Licensor for inclusion in the Work by the copyright owner
or by an individual or Legal Entity authorized to submit on behalf of
the copyright owner. For the purposes of this definition, "submitted"
means any form of electronic, verbal, or written communication sent
to the Licensor or its representatives, including but not limited to
communication on electronic mailing lists, source code control systems,
and issue tracking systems that are managed by, or on behalf of, the
Licensor for the purpose of discussing and improving the Work, but
excluding communication that is conspicuously marked or otherwise
designated in writing by the copyright owner as "Not a Contribution."

"Contributor" shall mean Licensor and any individual or Legal Entity
on behalf of whom a Contribution has been received by Licensor and
subsequently incorporated within the Work.

2. Grant of Copyright License. Subject to the terms and conditions of
   this License, each Contributor hereby grants to You a perpetual,
   worldwide, non-exclusive, no-charge, royalty-free, irrevocable
   copyright license to reproduce, prepare Derivative Works of,
   publicly display, publicly perform, sublicense, and distribute the
   Work and such Derivative Works in Source or Object form.

3. Grant of Patent License. Subject to the terms and conditions of
   this License, each Contributor hereby grants to You a perpetual,
   worldwide, non-exclusive, no-charge, royalty-free, irrevocable
   (except as stated in this section) patent license to make, have made,
   use, offer to sell, sell, import, and otherwise transfer the Work,
   where such license applies only to those patent claims licensable
   by such Contributor that are necessarily infringed by their
   Contribution(s) alone or by combination of their Contribution(s)
   with the Work to which such Contribution(s) was submitted. If You
   institute patent litigation against any entity (including a
   cross-claim or counterclaim in a lawsuit) alleging that the Work
   or a Contribution incorporated within the Work constitutes direct
   or contributory patent infringement, then any patent licenses
   granted to You under this License for that Work shall terminate
   as of the date such litigation is filed.

4. Redistribution. You may reproduce and distribute copies of the
   Work or Derivative Works thereof in any medium, with or without
   modifications, and in Source or Object form, provided that You
   meet the following conditions:

   (a) You must give any other recipients of the Work or
       Derivative Works a copy of this License; and

   (b) You must cause any modified files to carry prominent notices
       stating that You changed the files; and

   (c) You must retain, in the Source form of any Derivative Works
       that You distribute, all copyright, patent, trademark, and
       attribution notices from the Source form of the Work,
       excluding those notices that do not pertain to any part of
       the Derivative Works; and

   (d) If the Work includes a "NOTICE" text file as part of its
       distribution, then any Derivative Works that You distribute must
       include a readable copy of the attribution notices contained
       within such NOTICE file, excluding those notices that do not
       pertain to any part of the Derivative Works, in at least one
       of the following places: within a NOTICE text file distributed
       as part of the Derivative Works; within the Source form or
       documentation, if provided along with the Derivative Works; or,
       within a display generated by the Derivative Works, if and
       wherever such third-party notices normally appear. The contents
       of the NOTICE file are for informational purposes only and
       do not modify the License. You may add Your own attribution
       notices within Derivative Works that You distribute, alongside
       or as an addendum to the NOTICE text from the Work, provided
       that such additional attribution notices cannot be construed
       as modifying the License.

   You may add Your own copyright statement to Your modifications and
   may provide additional or different license terms and conditions
   for use, reproduction, or distribution of Your modifications, or
   for any such Derivative Works as a whole, provided Your use,
   reproduction, and distribution of the Work otherwise complies with
   the conditions stated in this License.

5. Submission of Contributions. Unless You explicitly state otherwise,
   any Contribution intentionally submitted for inclusion in the Work

by You to the Licensor shall be under the terms and conditions of
this License, without any additional terms or conditions.
Notwithstanding the above, nothing herein shall supersede or modify
the terms of any separate license agreement you may have executed
with Licensor regarding such Contributions.

6. Trademarks. This License does not grant permission to use the trade
names, trademarks, service marks, or product names of the Licensor,
except as required for reasonable and customary use in describing the
origin of the Work and reproducing the content of the NOTICE file.

7. Disclaimer of Warranty. Unless required by applicable law or
agreed to in writing, Licensor provides the Work (and each
Contributor provides its Contributions) on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or
implied, including, without limitation, any warranties or conditions
of TITLE, NON-INFRINGEMENT, MERCHANTABILITY, or FITNESS FOR A
PARTICULAR PURPOSE. You are solely responsible for determining the
appropriateness of using or redistributing the Work and assume any
risks associated with Your exercise of permissions under this License.

8. Limitation of Liability. In no event and under no legal theory,
whether in tort (including negligence), contract, or otherwise,
unless required by applicable law (such as deliberate and grossly
negligent acts) or agreed to in writing, shall any Contributor be
liable to You for damages, including any direct, indirect, special,
incidental, or consequential damages of any character arising as a
result of this License or out of the use or inability to use the
Work (including but not limited to damages for loss of goodwill,
work stoppage, computer failure or malfunction, or any and all
other commercial damages or losses), even if such Contributor
has been advised of the possibility of such damages.

9. Accepting Warranty or Additional Liability. While redistributing
the Work or Derivative Works thereof, You may choose to offer,
and charge a fee for, acceptance of support, warranty, indemnity,
or other liability obligations and/or rights consistent with this
License. However, in accepting such obligations, You may act only
on Your own behalf and on Your sole responsibility, not on behalf
of any other Contributor, and only if You agree to indemnify,
defend, and hold each Contributor harmless for any liability
incurred by, or claims asserted against, such Contributor by reason
of your accepting any such warranty or additional liability.

END OF TERMS AND CONDITIONS

APPENDIX: How to apply the Apache License to your work.

To apply the Apache License to your work, attach the following
boilerplate notice, with the fields enclosed by brackets "[]"
replaced with your own identifying information. (Don't include
the brackets!) The text should be enclosed in the appropriate
comment syntax for the file format. We also recommend that a
file or class name and description of purpose be included on the
same "printed page" as the copyright notice for easier
identification within third-party archives.

Copyright [yyyy] [name of copyright owner]

```
   Licensed under the Apache License, Version 2.0 (the "License");
   you may not use this file except in compliance with the License.
   You may obtain a copy of the License at

       http://www.apache.org/licenses/LICENSE-2.0

   Unless required by applicable law or agreed to in writing, software
   distributed under the License is distributed on an "AS IS" BASIS,
   WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
   See the License for the specific language governing permissions and
   limitations under the License.
---------------------------------------------------------------------
cmake/Utilities/cmlibuv/LICENSE
---------------------------------------------------------------------
libuv is licensed for use as follows:

====
Copyright (c) 2015-present libuv project contributors.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
====

This license applies to parts of libuv originating from the
https://github.com/joyent/libuv repository:

====

Copyright Joyent, Inc. and other Node contributors. All rights reserved.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
```

```
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

====

This license applies to all parts of libuv that are not externally
maintained libraries.

The externally maintained libraries used by libuv are:

  - tree.h (from FreeBSD), copyright Niels Provos. Two clause BSD license.

  - inet_pton and inet_ntop implementations, contained in src/inet.c, are
    copyright the Internet Systems Consortium, Inc., and licensed under the ISC
    license.

  - stdint-msvc2008.h (from msinttypes), copyright Alexander Chemeris. Three
    clause BSD license.

  - pthread-fixes.h, pthread-fixes.c, copyright Google Inc. and Sony Mobile
    Communications AB. Three clause BSD license.

  - android-ifaddrs.h, android-ifaddrs.c, copyright Berkeley Software Design
    Inc, Kenneth MacKay and Emergya (Cloud4all, FP7/2007-2013, grant agreement
    n° 289016). Three clause BSD license.
--------------------------------------------------------------------
cmake/Utilities/cmjsoncpp/LICENSE
--------------------------------------------------------------------
The JsonCpp library's source code, including accompanying documentation,
tests and demonstration applications, are licensed under the following
conditions...

Baptiste Lepilleur and The JsonCpp Authors explicitly disclaim copyright in all
jurisdictions which recognize such a disclaimer. In such jurisdictions,
this software is released into the Public Domain.

In jurisdictions which do not recognize Public Domain property (e.g. Germany as of
2010), this software is Copyright (c) 2007-2010 by Baptiste Lepilleur and
The JsonCpp Authors, and is released under the terms of the MIT License (see below).

In jurisdictions which recognize Public Domain property, the user of this
software may choose to accept it either as 1) Public Domain, 2) under the
conditions of the MIT License (see below), or 3) under the terms of dual
Public Domain/MIT License conditions described here, as they choose.

The MIT License is about as close to Public Domain as a license can get, and is
described in clear, concise terms at:

   http://en.wikipedia.org/wiki/MIT_License

The full text of the MIT License follows:

========================================================================
Copyright (c) 2007-2010 Baptiste Lepilleur and The JsonCpp Authors

Permission is hereby granted, free of charge, to any person
obtaining a copy of this software and associated documentation
files (the "Software"), to deal in the Software without
restriction, including without limitation the rights to use, copy,
```

```
modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND
NONINFRINGEMENT. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS
BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN
ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE
SOFTWARE.
================================================================================
(END LICENSE TEXT)

The MIT license is compatible with both the GPL and commercial
software, affording one all of the rights of Public Domain with the
minor nuisance of being required to keep the above copyright notice
and license text in the source code. Note also that by accepting the
Public Domain "license" you can re-license your copy using whatever
license you like.
--------------------------------------------------------------------
cmake/Utilities/cmexpat/COPYING
--------------------------------------------------------------------
Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper
Copyright (c) 2001-2017 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
--------------------------------------------------------------------
cmake/Utilities/cmcompress/Copyright.txt
--------------------------------------------------------------------
Copyright (c) 1985, 1986 The Regents of the University of California.
All rights reserved.

This code is derived from software contributed to Berkeley by
James A. Woods, derived from original work by Spencer Thomas
and Joseph Orost.

Redistribution and use in source and binary forms, with or without
```

```
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. All advertising materials mentioning features or use of this software
   must display the following acknowledgement:
     This product includes software developed by the University of
     California, Berkeley and its contributors.
4. Neither the name of the University nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
-----------------------------------------------------------------
cmake/Tests/CPackWiXGenerator/license.txt
-----------------------------------------------------------------
hello world
merhaba dünya□□□□□□□приветмир□□□□□□□□□□□□□□□






4-Byte sequences:
  Perch (Fish) □ Elevator □!
-----------------------------------------------------------------
cmake/Tests/Tutorial/Step7/License.txt
-----------------------------------------------------------------
This is the open source License.txt file introduced in
CMake/Tests/Tutorial/Step6...
-----------------------------------------------------------------
cmake/Tests/Tutorial/Step6/License.txt
-----------------------------------------------------------------
This is the open source License.txt file introduced in
CMake/Tests/Tutorial/Step6...
-----------------------------------------------------------------
cmake/Tests/CPackComponentsForAll/license.txt
-----------------------------------------------------------------
LICENSE
-------
This is an installer created using CPack (https://cmake.org). No license provided.
-----------------------------------------------------------------
cmake/Tests/IncludeDirectories/TargetIncludeDirectories/copy_includes.cpp
-----------------------------------------------------------------

#include "common.h"
```

```
int main()
{
  return 0;
}
-----------------------------------------------------------------
cmake/Tests/CPackComponentsDEB/license.txt
-----------------------------------------------------------------
LICENSE
-------
This is an installer created using CPack (https://cmake.org). No license provided.
-----------------------------------------------------------------
cmake/Tests/RunCMake/try_compile/CopyFileErrorNoCopyFile-stderr.txt
-----------------------------------------------------------------
CMake Error at CopyFileErrorNoCopyFile.cmake:1 \(try_compile\):
  COPY_FILE_ERROR may be used only with COPY_FILE
Call Stack \(most recent call first\):
  CMakeLists.txt:3 \(include\)
-----------------------------------------------------------------
cmake/Tests/RunCMake/try_compile/CopyFileErrorNoCopyFile.cmake
-----------------------------------------------------------------
try_compile(RESULT ${CMAKE_CURRENT_BINARY_DIR} ${CMAKE_CURRENT_SOURCE_DIR}/src.c
  COPY_FILE_ERROR _copied)
-----------------------------------------------------------------
cmake/Tests/RunCMake/try_compile/CopyFileErrorNoCopyFile-result.txt
-----------------------------------------------------------------
1
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/f1.txt
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/f2.txt
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/d1/
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/d1/d1.txt
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/d2/
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/d2/d2.txt
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/f3.txt
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/d3/
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Tests/RunCMake/CommandLine/copy_input/d3/d3.txt
-----------------------------------------------------------------
-----------------------------------------------------------------
cmake/Source/kwsys/Copyright.txt
```

```
------------------------------------------------------------------
KWSys - Kitware System Library
Copyright 2000-2016 Kitware, Inc. and Contributors
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

* Redistributions of source code must retain the above copyright
  notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
  notice, this list of conditions and the following disclaimer in the
  documentation and/or other materials provided with the distribution.

* Neither the name of Kitware, Inc. nor the names of Contributors
  may be used to endorse or promote products derived from this
  software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

------------------------------------------------------------------------------

The following individuals and institutions are among the Contributors:

* Insight Software Consortium <insightsoftwareconsortium.org>

See version control history for details of individual contributions.
```

3.14 coreutils

```
coreutils
------------------------------------------------------------------
coreutils/lib/copy-acl.c
------------------------------------------------------------------
/* Copy access control list from one file to file.  -*- coding: utf-8 -*-

   Copyright (C) 2002-2003, 2005-2017 Free Software Foundation, Inc.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <https://www.gnu.org/licenses/>.

   Written by Paul Eggert, Andreas Grünbacher, and Bruno Haible.  */

#include <config.h>

#include "acl.h"

#include <errno.h>

#include "quote.h"
#include "error.h"
#include "gettext.h"
#define _(msgid) gettext (msgid)


/* Copy access control lists from one file to another. If SOURCE_DESC is
   a valid file descriptor, use file descriptor operations, else use
   filename based operations on SRC_NAME. Likewise for DEST_DESC and
   DST_NAME.
   If access control lists are not available, fchmod the target file to
   MODE.  Also sets the non-permission bits of the destination file
   (S_ISUID, S_ISGID, S_ISVTX) to those from MODE if any are set.
   Return 0 if successful, otherwise output a diagnostic and return a
   negative error code.  */

int
copy_acl (const char *src_name, int source_desc, const char *dst_name,
          int dest_desc, mode_t mode)
{
  int ret = qcopy_acl (src_name, source_desc, dst_name, dest_desc, mode);
  switch (ret)
    {
    case -2:
      error (0, errno, "%s", quote (src_name));
      break;
```

```
    case -1:
      error (0, errno, _("preserving permissions for %s"), quote (dst_name));
      break;

    default:
      break;
    }
  return ret;
}
------------------------------------------------------------------
coreutils/src/copy.h
------------------------------------------------------------------
/* core functions for copying files and directories
   Copyright (C) 1989-2017 Free Software Foundation, Inc.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation, either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <https://www.gnu.org/licenses/>.  */

/* Extracted from cp.c and librarified by Jim Meyering.  */

#ifndef COPY_H
# define COPY_H

# include <stdbool.h>
# include "hash.h"

/* Control creation of sparse files (files with holes).  */
enum Sparse_type
{
  SPARSE_UNUSED,

  /* Never create holes in DEST.  */
  SPARSE_NEVER,

  /* This is the default.  Use a crude (and sometimes inaccurate)
     heuristic to determine if SOURCE has holes.  If so, try to create
     holes in DEST.  */
  SPARSE_AUTO,

  /* For every sufficiently long sequence of bytes in SOURCE, try to
     create a corresponding hole in DEST.  There is a performance penalty
     here because CP has to search for holes in SRC.  But if the holes are
     big enough, that penalty can be offset by the decrease in the amount
     of data written to disk.   */
  SPARSE_ALWAYS
};

/* Control creation of COW files.  */
```

```
enum Reflink_type
{
  /* Default to a standard copy.  */
  REFLINK_NEVER,

  /* Try a COW copy and fall back to a standard copy.  */
  REFLINK_AUTO,

  /* Require a COW copy and fail if not available.  */
  REFLINK_ALWAYS
};

/* This type is used to help mv (via copy.c) distinguish these cases.  */
enum Interactive
{
  I_ALWAYS_YES = 1,
  I_ALWAYS_NO,
  I_ASK_USER,
  I_UNSPECIFIED
};

/* How to handle symbolic links.  */
enum Dereference_symlink
{
  DEREF_UNDEFINED = 1,

  /* Copy the symbolic link itself.  -P  */
  DEREF_NEVER,

  /* If the symbolic is a command line argument, then copy
     its referent.  Otherwise, copy the symbolic link itself.  -H  */
  DEREF_COMMAND_LINE_ARGUMENTS,

  /* Copy the referent of the symbolic link.  -L  */
  DEREF_ALWAYS
};

# define VALID_SPARSE_MODE(Mode)        \
  ((Mode) == SPARSE_NEVER               \
   || (Mode) == SPARSE_AUTO             \
   || (Mode) == SPARSE_ALWAYS)

# define VALID_REFLINK_MODE(Mode)       \
  ((Mode) == REFLINK_NEVER              \
   || (Mode) == REFLINK_AUTO            \
   || (Mode) == REFLINK_ALWAYS)

/* These options control how files are copied by at least the
   following programs: mv (when rename doesn't work), cp, install.
   So, if you add a new member, be sure to initialize it in
   mv.c, cp.c, and install.c.  */
struct cp_options
{
  enum backup_type backup_type;

  /* How to handle symlinks in the source.  */
  enum Dereference_symlink dereference;

  /* This value is used to determine whether to prompt before removing
```

```
   each existing destination file.  It works differently depending on
   whether move_mode is set.  See code/comments in copy.c.  */
enum Interactive interactive;

/* Control creation of sparse files.  */
enum Sparse_type sparse_mode;

/* Set the mode of the destination file to exactly this value
   if SET_MODE is nonzero.  */
mode_t mode;

/* If true, copy all files except (directories and, if not dereferencing
   them, symbolic links,) as if they were regular files.  */
bool copy_as_regular;

/* If true, remove each existing destination nondirectory before
   trying to open it.  */
bool unlink_dest_before_opening;

/* If true, first try to open each existing destination nondirectory,
   then, if the open fails, unlink and try again.
   This option must be set for 'cp -f', in case the destination file
   exists when the open is attempted.  It is irrelevant to 'mv' since
   any destination is sure to be removed before the open.  */
bool unlink_dest_after_failed_open;

/* If true, create hard links instead of copying files.
   Create destination directories as usual. */
bool hard_link;

/* If true, rather than copying, first attempt to use rename.
   If that fails, then resort to copying.  */
bool move_mode;

/* If true, install(1) is the caller.  */
bool install_mode;

/* Whether this process has appropriate privileges to chown a file
   whose owner is not the effective user ID.  */
bool chown_privileges;

/* Whether this process has appropriate privileges to do the
   following operations on a file even when it is owned by some
   other user: set the file's atime, mtime, mode, or ACL; remove or
   rename an entry in the file even though it is a sticky directory,
   or to mount on the file.  */
bool owner_privileges;

/* If true, when copying recursively, skip any subdirectories that are
   on different file systems from the one we started on.  */
bool one_file_system;

/* If true, attempt to give the copies the original files' permissions,
   owner, group, and timestamps. */
bool preserve_ownership;
bool preserve_mode;
bool preserve_timestamps;
bool explicit_no_preserve_mode;
```

```
/* If true, attempt to set specified security context */
bool set_security_context;

/* Enabled for mv, and for cp by the --preserve=links option.
   If true, attempt to preserve in the destination files any
   logical hard links between the source files.  If used with cp's
   --no-dereference option, and copying two hard-linked files,
   the two corresponding destination files will also be hard linked.

   If used with cp's --dereference (-L) option, then, as that option implies,
   hard links are *not* preserved.  However, when copying a file F and
   a symlink S to F, the resulting S and F in the destination directory
   will be hard links to the same file (a copy of F).  */
bool preserve_links;

/* Optionally don't copy the data, either with CoW reflink files or
   explicitly with the --attributes-only option.  */
bool data_copy_required;

/* If true and any of the above (for preserve) file attributes cannot
   be applied to a destination file, treat it as a failure and return
   nonzero immediately.  E.g. for cp -p this must be true, for mv it
   must be false.  */
bool require_preserve;

/* If true, attempt to preserve the SELinux security context, too.
   Set this only if the kernel is SELinux enabled.  */
bool preserve_security_context;

/* Useful only when preserve_context is true.
   If true, a failed attempt to preserve file's security context
   propagates failure "out" to the caller, along with full diagnostics.
   If false, a failure to preserve file's security context does not
   change the invoking application's exit status, but may output diagnostics.
   For example, with 'cp --preserve=context' this flag is "true",
   while with 'cp --preserve=all' or 'cp -a', it is "false". */
bool require_preserve_context;

/* If true, attempt to preserve extended attributes using libattr.
   Ignored if coreutils are compiled without xattr support. */
bool preserve_xattr;

/* Useful only when preserve_xattr is true.
   If true, a failed attempt to preserve file's extended attributes
   propagates failure "out" to the caller, along with full diagnostics.
   If false, a failure to preserve file's extended attributes does not
   change the invoking application's exit status, but may output diagnostics.
   For example, with 'cp --preserve=xattr' this flag is "true",
   while with 'cp --preserve=all' or 'cp -a', it is "false". */
bool require_preserve_xattr;

/* This allows us to output warnings in cases 2 and 4 below,
   while being quiet for case 1 (when reduce_diagnostics is true).
     1. cp -a                       try to copy xattrs with no errors
     2. cp --preserve=all           copy xattrs with all but ENOTSUP warnings
     3. cp --preserve=xattr,context copy xattrs with all errors
     4. mv                          copy xattrs with all but ENOTSUP warnings
 */
bool reduce_diagnostics;
```

```
  /* If true, copy directories recursively and copy special files
     as themselves rather than copying their contents. */
  bool recursive;

  /* If true, set file mode to value of MODE.  Otherwise,
     set it based on current umask modified by UMASK_KILL.  */
  bool set_mode;

  /* If true, create symbolic links instead of copying files.
     Create destination directories as usual. */
  bool symbolic_link;

  /* If true, do not copy a nondirectory that has an existing destination
     with the same or newer modification time. */
  bool update;

  /* If true, display the names of the files before copying them. */
  bool verbose;

  /* If true, stdin is a tty.  */
  bool stdin_tty;

  /* If true, open a dangling destination symlink when not in move_mode.
     Otherwise, copy_reg gives a diagnostic (it refuses to write through
     such a symlink) and returns false.  */
  bool open_dangling_dest_symlink;

  /* Control creation of COW files.  */
  enum Reflink_type reflink_mode;

  /* This is a set of destination name/inode/dev triples.  Each such triple
     represents a file we have created corresponding to a source file name
     that was specified on the command line.  Use it to avoid clobbering
     source files in commands like this:
       rm -rf a b c; mkdir a b c; touch a/f b/f; mv a/f b/f c
     For now, it protects only regular files when copying (i.e., not renaming).
     When renaming, it protects all non-directories.
     Use dest_info_init to initialize it, or set it to NULL to disable
     this feature.  */
  Hash_table *dest_info;

  /* FIXME */
  Hash_table *src_info;
};

# define XSTAT(X, Src_name, Src_sb) \
  ((X)->dereference == DEREF_NEVER \
   ? lstat (Src_name, Src_sb) \
   : stat (Src_name, Src_sb))

/* Arrange to make rename calls go through the wrapper function
   on systems with a rename function that fails for a source file name
   specified with a trailing slash.  */
# if RENAME_TRAILING_SLASH_BUG
int rpl_rename (const char *, const char *);
#  undef rename
#  define rename rpl_rename
# endif
```

```
bool copy (char const *src_name, char const *dst_name,
           bool nonexistent_dst, const struct cp_options *options,
           bool *copy_into_self, bool *rename_succeeded);

extern bool set_process_security_ctx (char const *src_name,
                                      char const *dst_name,
                                      mode_t mode, bool new_dst,
                                      const struct cp_options *x);

extern bool set_file_security_ctx (char const *dst_name, bool process_local,
                                   bool recurse, const struct cp_options *x);

void dest_info_init (struct cp_options *);
void src_info_init (struct cp_options *);

void cp_options_default (struct cp_options *);
bool chown_failure_ok (struct cp_options const *) _GL_ATTRIBUTE_PURE;
mode_t cached_umask (void);

#endif
-----------------------------------------------------------------------
coreutils/src/copy.c
-----------------------------------------------------------------------
/* copy.c -- core functions for copying files and directories
   Copyright (C) 1989-2017 Free Software Foundation, Inc.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation, either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <https://www.gnu.org/licenses/>.  */

/* Extracted from cp.c and librarified by Jim Meyering.  */

#include <config.h>
#include <stdio.h>
#include <assert.h>
#include <sys/ioctl.h>
#include <sys/types.h>
#include <selinux/selinux.h>

#if HAVE_HURD_H
# include <hurd.h>
#endif
#if HAVE_PRIV_H
# include <priv.h>
#endif

#include "system.h"
#include "acl.h"
#include "backupfile.h"
```

```
#include "buffer-lcm.h"
#include "canonicalize.h"
#include "copy.h"
#include "cp-hash.h"
#include "extent-scan.h"
#include "die.h"
#include "error.h"
#include "fadvise.h"
#include "fcntl--.h"
#include "fiemap.h"
#include "file-set.h"
#include "filemode.h"
#include "filenamecat.h"
#include "force-link.h"
#include "full-write.h"
#include "hash.h"
#include "hash-triple.h"
#include "ignore-value.h"
#include "ioblksize.h"
#include "quote.h"
#include "root-uid.h"
#include "same.h"
#include "savedir.h"
#include "stat-size.h"
#include "stat-time.h"
#include "utimecmp.h"
#include "utimens.h"
#include "write-any-file.h"
#include "areadlink.h"
#include "yesno.h"
#include "selinux.h"

#if USE_XATTR
# include <attr/error_context.h>
# include <attr/libattr.h>
# include <stdarg.h>
# include "verror.h"
#endif

#if HAVE_LINUX_FALLOC_H
# include <linux/falloc.h>
#endif

/* See HAVE_FALLOCATE workaround when including this file.  */
#ifdef HAVE_LINUX_FS_H
# include <linux/fs.h>
#endif

#if !defined FICLONE && defined __linux__
# define FICLONE _IOW (0x94, 9, int)
#endif

#ifndef HAVE_FCHOWN
# define HAVE_FCHOWN false
# define fchown(fd, uid, gid) (-1)
#endif

#ifndef HAVE_LCHOWN
# define HAVE_LCHOWN false
```

```
# define lchown(name, uid, gid) chown (name, uid, gid)
#endif

#ifndef HAVE_MKFIFO
static int
rpl_mkfifo (char const *file, mode_t mode)
{
  errno = ENOTSUP;
  return -1;
}
# define mkfifo rpl_mkfifo
#endif

#ifndef USE_ACL
# define USE_ACL 0
#endif

#define SAME_OWNER(A, B) ((A).st_uid == (B).st_uid)
#define SAME_GROUP(A, B) ((A).st_gid == (B).st_gid)
#define SAME_OWNER_AND_GROUP(A, B) (SAME_OWNER (A, B) && SAME_GROUP (A, B))

/* LINK_FOLLOWS_SYMLINKS is tri-state; if it is -1, we don't know
   how link() behaves, so assume we can't hardlink symlinks in that case.  */
#if (defined HAVE_LINKAT && ! LINKAT_SYMLINK_NOTSUP) || ! LINK_FOLLOWS_SYMLINKS
# define CAN_HARDLINK_SYMLINKS 1
#else
# define CAN_HARDLINK_SYMLINKS 0
#endif

struct dir_list
{
  struct dir_list *parent;
  ino_t ino;
  dev_t dev;
};

/* Initial size of the cp.dest_info hash table.  */
#define DEST_INFO_INITIAL_CAPACITY 61

static bool copy_internal (char const *src_name, char const *dst_name,
                           bool new_dst, struct stat const *parent,
                           struct dir_list *ancestors,
                           const struct cp_options *x,
                           bool command_line_arg,
                           bool *first_dir_created_per_command_line_arg,
                           bool *copy_into_self,
                           bool *rename_succeeded);
static bool owner_failure_ok (struct cp_options const *x);

/* Pointers to the file names:  they're used in the diagnostic that is issued
   when we detect the user is trying to copy a directory into itself.  */
static char const *top_level_src_name;
static char const *top_level_dst_name;

/* Set the timestamp of symlink, FILE, to TIMESPEC.
   If this system lacks support for that, simply return 0.  */
static inline int
utimens_symlink (char const *file, struct timespec const *timespec)
{
```

```
  int err = lutimens (file, timespec);
  /* When configuring on a system with new headers and libraries, and
     running on one with a kernel that is old enough to lack the syscall,
     utimensat fails with ENOSYS.  Ignore that.  */
  if (err && errno == ENOSYS)
    err = 0;
  return err;
}

/* Attempt to punch a hole to avoid any permanent
   speculative preallocation on file systems such as XFS.
   Return values as per fallocate(2) except ENOSYS etc. are ignored.  */

static int
punch_hole (int fd, off_t offset, off_t length)
{
  int ret = 0;
/* +0 is to work around older <linux/fs.h> defining HAVE_FALLOCATE to empty.  */
#if HAVE_FALLOCATE + 0
# if defined FALLOC_FL_PUNCH_HOLE && defined FALLOC_FL_KEEP_SIZE
  ret = fallocate (fd, FALLOC_FL_PUNCH_HOLE | FALLOC_FL_KEEP_SIZE,
                   offset, length);
  if (ret < 0 && (is_ENOTSUP (errno) || errno == ENOSYS))
    ret = 0;
# endif
#endif
  return ret;
}

/* Create a hole at the end of a file,
   avoiding preallocation if requested.  */

static bool
create_hole (int fd, char const *name, bool punch_holes, off_t size)
{
  off_t file_end = lseek (fd, size, SEEK_CUR);

  if (file_end < 0)
    {
      error (0, errno, _("cannot lseek %s"), quoteaf (name));
      return false;
    }

  /* Some file systems (like XFS) preallocate when write extending a file.
     I.e., a previous write() may have preallocated extra space
     that the seek above will not discard.  A subsequent write() could
     then make this allocation permanent.  */
  if (punch_holes && punch_hole (fd, file_end - size, size) < 0)
    {
      error (0, errno, _("error deallocating %s"), quoteaf (name));
      return false;
    }

  return true;
}


/* Copy the regular file open on SRC_FD/SRC_NAME to DST_FD/DST_NAME,
   honoring the MAKE_HOLES setting and using the BUF_SIZE-byte buffer
```

```
   BUF for temporary storage.  Copy no more than MAX_N_READ bytes.
   Return true upon successful completion;
   print a diagnostic and return false upon error.
   Note that for best results, BUF should be "well"-aligned.
   BUF must have sizeof(uintptr_t)-1 bytes of additional space
   beyond BUF[BUF_SIZE-1].
   Set *LAST_WRITE_MADE_HOLE to true if the final operation on
   DEST_FD introduced a hole.  Set *TOTAL_N_READ to the number of
   bytes read.  */
static bool
sparse_copy (int src_fd, int dest_fd, char *buf, size_t buf_size,
             size_t hole_size, bool punch_holes,
             char const *src_name, char const *dst_name,
             uintmax_t max_n_read, off_t *total_n_read,
             bool *last_write_made_hole)
{
  *last_write_made_hole = false;
  *total_n_read = 0;
  bool make_hole = false;
  off_t psize = 0;

  while (max_n_read)
    {
      ssize_t n_read = read (src_fd, buf, MIN (max_n_read, buf_size));
      if (n_read < 0)
        {
          if (errno == EINTR)
            continue;
          error (0, errno, _("error reading %s"), quoteaf (src_name));
          return false;
        }
      if (n_read == 0)
        break;
      max_n_read -= n_read;
      *total_n_read += n_read;

      /* Loop over the input buffer in chunks of hole_size.  */
      size_t csize = hole_size ? hole_size : buf_size;
      char *cbuf = buf;
      char *pbuf = buf;

      while (n_read)
        {
          bool prev_hole = make_hole;
          csize = MIN (csize, n_read);

          if (hole_size && csize)
            make_hole = is_nul (cbuf, csize);

          bool transition = (make_hole != prev_hole) && psize;
          bool last_chunk = (n_read == csize && ! make_hole) || ! csize;

          if (transition || last_chunk)
            {
              if (! transition)
                psize += csize;

              if (! prev_hole)
                {
```

```
                if (full_write (dest_fd, pbuf, psize) != psize)
                  {
                    error (0, errno, _("error writing %s"),
                           quoteaf (dst_name));
                    return false;
                  }
              }
            else
              {
                if (! create_hole (dest_fd, dst_name, punch_holes, psize))
                  return false;
              }

            pbuf = cbuf;
            psize = csize;

            if (last_chunk)
              {
                if (! csize)
                  n_read = 0; /* Finished processing buffer.  */

                if (transition)
                  csize = 0;  /* Loop again to deal with last chunk.  */
                else
                  psize = 0;  /* Reset for next read loop.  */
              }
          }
        else  /* Coalesce writes/seeks.  */
          {
            if (psize <= OFF_T_MAX - csize)
              psize += csize;
            else
              {
                error (0, 0, _("overflow reading %s"), quoteaf (src_name));
                return false;
              }
          }

        n_read -= csize;
        cbuf += csize;
      }

    *last_write_made_hole = make_hole;

    /* It's tempting to break early here upon a short read from
       a regular file.  That would save the final read syscall
       for each file.  Unfortunately that doesn't work for
       certain files in /proc or /sys with linux kernels.  */
  }

/* Ensure a trailing hole is created, so that subsequent
   calls of sparse_copy() start at the correct offset.  */
if (make_hole && ! create_hole (dest_fd, dst_name, punch_holes, psize))
  return false;
else
  return true;
}

/* Perform the O(1) btrfs clone operation, if possible.
```

```
   Upon success, return 0.  Otherwise, return -1 and set errno.  */
static inline int
clone_file (int dest_fd, int src_fd)
{
#ifdef FICLONE
  return ioctl (dest_fd, FICLONE, src_fd);
#else
  (void) dest_fd;
  (void) src_fd;
  errno = ENOTSUP;
  return -1;
#endif
}

/* Write N_BYTES zero bytes to file descriptor FD.  Return true if successful.
   Upon write failure, set errno and return false.  */
static bool
write_zeros (int fd, off_t n_bytes)
{
  static char *zeros;
  static size_t nz = IO_BUFSIZE;

  /* Attempt to use a relatively large calloc'd source buffer for
     efficiency, but if that allocation fails, resort to a smaller
     statically allocated one.  */
  if (zeros == NULL)
    {
      static char fallback[1024];
      zeros = calloc (nz, 1);
      if (zeros == NULL)
        {
          zeros = fallback;
          nz = sizeof fallback;
        }
    }

  while (n_bytes)
    {
      size_t n = MIN (nz, n_bytes);
      if ((full_write (fd, zeros, n)) != n)
        return false;
      n_bytes -= n;
    }

  return true;
}

/* Perform an efficient extent copy, if possible.  This avoids
   the overhead of detecting holes in hole-introducing/preserving
   copy, and thus makes copying sparse files much more efficient.
   Upon a successful copy, return true.  If the initial extent scan
   fails, set *NORMAL_COPY_REQUIRED to true and return false.
   Upon any other failure, set *NORMAL_COPY_REQUIRED to false and
   return false.  */
static bool
extent_copy (int src_fd, int dest_fd, char *buf, size_t buf_size,
             size_t hole_size, off_t src_total_size,
             enum Sparse_type sparse_mode,
             char const *src_name, char const *dst_name,
```

```
            bool *require_normal_copy)
{
  struct extent_scan scan;
  off_t last_ext_start = 0;
  off_t last_ext_len = 0;

  /* Keep track of the output position.
     We may need this at the end, for a final ftruncate.  */
  off_t dest_pos = 0;

  extent_scan_init (src_fd, &scan);

  *require_normal_copy = false;
  bool wrote_hole_at_eof = true;
  do
    {
      bool ok = extent_scan_read (&scan);
      if (! ok)
        {
          if (scan.hit_final_extent)
            break;

          if (scan.initial_scan_failed)
            {
              *require_normal_copy = true;
              return false;
            }

          error (0, errno, _("%s: failed to get extents info"),
                 quotef (src_name));
          return false;
        }

      bool empty_extent = false;
      for (unsigned int i = 0; i < scan.ei_count || empty_extent; i++)
        {
          off_t ext_start;
          off_t ext_len;
          off_t ext_hole_size;

          if (i < scan.ei_count)
            {
              ext_start = scan.ext_info[i].ext_logical;
              ext_len = scan.ext_info[i].ext_length;
            }
          else /* empty extent at EOF.  */
            {
              i--;
              ext_start = last_ext_start + scan.ext_info[i].ext_length;
              ext_len = 0;
            }

          /* Truncate extent to EOF.  Extents starting after EOF are
             treated as zero length extents starting right after EOF.
             Generally this will trigger with an extent starting after
             src_total_size, and result in creating a hole or zeros until EOF.
             Though in a file in which extents have changed since src_total_size
             was determined, we might have an extent spanning that size,
             in which case we'll only copy data up to that size.  */
```

```
if (src_total_size < ext_start + ext_len)
  {
    if (src_total_size < ext_start)
      ext_start = src_total_size;
    ext_len = src_total_size - ext_start;
  }

ext_hole_size = ext_start - last_ext_start - last_ext_len;

wrote_hole_at_eof = false;

if (ext_hole_size)
  {
    if (lseek (src_fd, ext_start, SEEK_SET) < 0)
      {
        error (0, errno, _("cannot lseek %s"), quoteaf (src_name));
      fail:
        extent_scan_free (&scan);
        return false;
      }

    if ((empty_extent && sparse_mode == SPARSE_ALWAYS)
        || (!empty_extent && sparse_mode != SPARSE_NEVER))
      {
        if (! create_hole (dest_fd, dst_name,
                           sparse_mode == SPARSE_ALWAYS,
                           ext_hole_size))
          goto fail;
        wrote_hole_at_eof = true;
      }
    else
      {
        /* When not inducing holes and when there is a hole between
           the end of the previous extent and the beginning of the
           current one, write zeros to the destination file.  */
        off_t nzeros = ext_hole_size;
        if (empty_extent)
          nzeros = MIN (src_total_size - dest_pos, ext_hole_size);

        if (! write_zeros (dest_fd, nzeros))
          {
            error (0, errno, _("%s: write failed"),
                   quotef (dst_name));
            goto fail;
          }

        dest_pos = MIN (src_total_size, ext_start);
      }
  }

last_ext_start = ext_start;

/* Treat an unwritten but allocated extent much like a hole.
   I.e., don't read, but don't convert to a hole in the destination,
   unless SPARSE_ALWAYS.  */
/* For now, do not treat FIEMAP_EXTENT_UNWRITTEN specially,
   because that (in combination with no sync) would lead to data
   loss at least on XFS and ext4 when using 2.6.39-rc3 kernels.  */
if (0 && (scan.ext_info[i].ext_flags & FIEMAP_EXTENT_UNWRITTEN))
```

```
          {
            empty_extent = true;
            last_ext_len = 0;
            if (ext_len == 0) /* The last extent is empty and processed.  */
              empty_extent = false;
          }
        else
          {
            off_t n_read;
            empty_extent = false;
            last_ext_len = ext_len;
            bool read_hole;

            if ( ! sparse_copy (src_fd, dest_fd, buf, buf_size,
                                sparse_mode == SPARSE_ALWAYS ? hole_size: 0,
                                true, src_name, dst_name, ext_len, &n_read,
                                &read_hole))
              goto fail;

            dest_pos = ext_start + n_read;
            if (n_read)
              wrote_hole_at_eof = read_hole;
          }

        /* If the file ends with unwritten extents not accounted for in the
           size, then skip processing them, and the associated redundant
           read() calls which will always return 0.  We will need to
           remove this when we add fallocate() so that we can maintain
           extents beyond the apparent size.  */
        if (dest_pos == src_total_size)
          {
            scan.hit_final_extent = true;
            break;
          }
      }

    /* Release the space allocated to scan->ext_info.  */
    extent_scan_free (&scan);

  }
while (! scan.hit_final_extent);

/* When the source file ends with a hole, we have to do a little more work,
   since the above copied only up to and including the final extent.
   In order to complete the copy, we may have to insert a hole or write
   zeros in the destination corresponding to the source file's hole-at-EOF.

   In addition, if the final extent was a block of zeros at EOF and we've
   just converted them to a hole in the destination, we must call ftruncate
   here in order to record the proper length in the destination.  */
if ((dest_pos < src_total_size || wrote_hole_at_eof)
    && (sparse_mode != SPARSE_NEVER
        ? ftruncate (dest_fd, src_total_size)
        : ! write_zeros (dest_fd, src_total_size - dest_pos)))
  {
    error (0, errno, _("failed to extend %s"), quoteaf (dst_name));
    return false;
  }
```

```
  if (sparse_mode == SPARSE_ALWAYS && dest_pos < src_total_size
      && punch_hole (dest_fd, dest_pos, src_total_size - dest_pos) < 0)
    {
      error (0, errno, _("error deallocating %s"), quoteaf (dst_name));
      return false;
    }

  return true;
}

/* FIXME: describe */
/* FIXME: rewrite this to use a hash table so we avoid the quadratic
   performance hit that's probably noticeable only on trees deeper
   than a few hundred levels.  See use of active_dir_map in remove.c  */

static bool _GL_ATTRIBUTE_PURE
is_ancestor (const struct stat *sb, const struct dir_list *ancestors)
{
  while (ancestors != 0)
    {
      if (ancestors->ino == sb->st_ino && ancestors->dev == sb->st_dev)
        return true;
      ancestors = ancestors->parent;
    }
  return false;
}

static bool
errno_unsupported (int err)
{
  return err == ENOTSUP || err == ENODATA;
}

#if USE_XATTR
static void
copy_attr_error (struct error_context *ctx _GL_UNUSED,
                 char const *fmt, ...)
{
  if (!errno_unsupported (errno))
    {
      int err = errno;
      va_list ap;

      /* use verror module to print error message */
      va_start (ap, fmt);
      verror (0, err, fmt, ap);
      va_end (ap);
    }
}

static void
copy_attr_allerror (struct error_context *ctx _GL_UNUSED,
                 char const *fmt, ...)
{
  int err = errno;
  va_list ap;

  /* use verror module to print error message */
  va_start (ap, fmt);
```

```
  verror (0, err, fmt, ap);
  va_end (ap);
}

static char const *
copy_attr_quote (struct error_context *ctx _GL_UNUSED, char const *str)
{
  return quoteaf (str);
}

static void
copy_attr_free (struct error_context *ctx _GL_UNUSED,
                char const *str _GL_UNUSED)
{
}

/* Exclude SELinux extended attributes that are otherwise handled,
   and are problematic to copy again.  Also honor attributes
   configured for exclusion in /etc/xattr.conf.
   FIXME: Should we handle POSIX ACLs similarly?
   Return zero to skip.  */
static int
check_selinux_attr (const char *name, struct error_context *ctx)
{
  return STRNCMP_LIT (name, "security.selinux")
         && attr_copy_check_permissions (name, ctx);
}

/* If positive SRC_FD and DST_FD descriptors are passed,
   then copy by fd, otherwise copy by name.  */

static bool
copy_attr (char const *src_path, int src_fd,
           char const *dst_path, int dst_fd, struct cp_options const *x)
{
  int ret;
  bool all_errors = (!x->data_copy_required || x->require_preserve_xattr);
  bool some_errors = (!all_errors && !x->reduce_diagnostics);
  bool selinux_done = (x->preserve_security_context || x->set_security_context);
  struct error_context ctx =
  {
    .error = all_errors ? copy_attr_allerror : copy_attr_error,
    .quote = copy_attr_quote,
    .quote_free = copy_attr_free
  };
  if (0 <= src_fd && 0 <= dst_fd)
    ret = attr_copy_fd (src_path, src_fd, dst_path, dst_fd,
                        selinux_done ? check_selinux_attr : NULL,
                        (all_errors || some_errors ? &ctx : NULL));
  else
    ret = attr_copy_file (src_path, dst_path,
                          selinux_done ? check_selinux_attr : NULL,
                          (all_errors || some_errors ? &ctx : NULL));

  return ret == 0;
}
#else /* USE_XATTR */

static bool
```

```
copy_attr (char const *src_path _GL_UNUSED,
           int src_fd _GL_UNUSED,
           char const *dst_path _GL_UNUSED,
           int dst_fd _GL_UNUSED,
           struct cp_options const *x _GL_UNUSED)
{
  return true;
}
#endif /* USE_XATTR */

/* Read the contents of the directory SRC_NAME_IN, and recursively
   copy the contents to DST_NAME_IN.  NEW_DST is true if
   DST_NAME_IN is a directory that was created previously in the
   recursion.   SRC_SB and ANCESTORS describe SRC_NAME_IN.
   Set *COPY_INTO_SELF if SRC_NAME_IN is a parent of
   (or the same as) DST_NAME_IN; otherwise, clear it.
   Propagate *FIRST_DIR_CREATED_PER_COMMAND_LINE_ARG from
   caller to each invocation of copy_internal.  Be careful to
   pass the address of a temporary, and to update
   *FIRST_DIR_CREATED_PER_COMMAND_LINE_ARG only upon completion.
   Return true if successful.  */

static bool
copy_dir (char const *src_name_in, char const *dst_name_in, bool new_dst,
          const struct stat *src_sb, struct dir_list *ancestors,
          const struct cp_options *x,
          bool *first_dir_created_per_command_line_arg,
          bool *copy_into_self)
{
  char *name_space;
  char *namep;
  struct cp_options non_command_line_options = *x;
  bool ok = true;

  name_space = savedir (src_name_in, SAVEDIR_SORT_FASTREAD);
  if (name_space == NULL)
    {
      /* This diagnostic is a bit vague because savedir can fail in
         several different ways.  */
      error (0, errno, _("cannot access %s"), quoteaf (src_name_in));
      return false;
    }

  /* For cp's -H option, dereference command line arguments, but do not
     dereference symlinks that are found via recursive traversal.  */
  if (x->dereference == DEREF_COMMAND_LINE_ARGUMENTS)
    non_command_line_options.dereference = DEREF_NEVER;

  bool new_first_dir_created = false;
  namep = name_space;
  while (*namep != '\0')
    {
      bool local_copy_into_self;
      char *src_name = file_name_concat (src_name_in, namep, NULL);
      char *dst_name = file_name_concat (dst_name_in, namep, NULL);
      bool first_dir_created = *first_dir_created_per_command_line_arg;

      ok &= copy_internal (src_name, dst_name, new_dst, src_sb,
                           ancestors, &non_command_line_options, false,
```

```
                          &first_dir_created,
                          &local_copy_into_self, NULL);
      *copy_into_self |= local_copy_into_self;

      free (dst_name);
      free (src_name);

      /* If we're copying into self, there's no point in continuing,
         and in fact, that would even infloop, now that we record only
         the first created directory per command line argument.  */
      if (local_copy_into_self)
        break;

      new_first_dir_created |= first_dir_created;
      namep += strlen (namep) + 1;
    }
  free (name_space);
  *first_dir_created_per_command_line_arg = new_first_dir_created;

  return ok;
}

/* Set the owner and owning group of DEST_DESC to the st_uid and
   st_gid fields of SRC_SB.  If DEST_DESC is undefined (-1), set
   the owner and owning group of DST_NAME instead; for
   safety prefer lchown if the system supports it since no
   symbolic links should be involved.  DEST_DESC must
   refer to the same file as DEST_NAME if defined.
   Upon failure to set both UID and GID, try to set only the GID.
   NEW_DST is true if the file was newly created; otherwise,
   DST_SB is the status of the destination.
   Return 1 if the initial syscall succeeds, 0 if it fails but it's OK
   not to preserve ownership, -1 otherwise.  */

static int
set_owner (const struct cp_options *x, char const *dst_name, int dest_desc,
           struct stat const *src_sb, bool new_dst,
           struct stat const *dst_sb)
{
  uid_t uid = src_sb->st_uid;
  gid_t gid = src_sb->st_gid;

  /* Naively changing the ownership of an already-existing file before
     changing its permissions would create a window of vulnerability if
     the file's old permissions are too generous for the new owner and
     group.  Avoid the window by first changing to a restrictive
     temporary mode if necessary.  */

  if (!new_dst && (x->preserve_mode || x->move_mode || x->set_mode))
    {
      mode_t old_mode = dst_sb->st_mode;
      mode_t new_mode =
        (x->preserve_mode || x->move_mode ? src_sb->st_mode : x->mode);
      mode_t restrictive_temp_mode = old_mode & new_mode & S_IRWXU;

      if ((USE_ACL
           || (old_mode & CHMOD_MODE_BITS
               & (~new_mode | S_ISUID | S_ISGID | S_ISVTX)))
          && qset_acl (dst_name, dest_desc, restrictive_temp_mode) != 0)
```

```
        {
          if (! owner_failure_ok (x))
            error (0, errno, _("clearing permissions for %s"),
                   quoteaf (dst_name));
          return -x->require_preserve;
        }
    }

  if (HAVE_FCHOWN && dest_desc != -1)
    {
      if (fchown (dest_desc, uid, gid) == 0)
        return 1;
      if (errno == EPERM || errno == EINVAL)
        {
          /* We've failed to set *both*.  Now, try to set just the group
             ID, but ignore any failure here, and don't change errno.  */
          int saved_errno = errno;
          ignore_value (fchown (dest_desc, -1, gid));
          errno = saved_errno;
        }
    }
  else
    {
      if (lchown (dst_name, uid, gid) == 0)
        return 1;
      if (errno == EPERM || errno == EINVAL)
        {
          /* We've failed to set *both*.  Now, try to set just the group
             ID, but ignore any failure here, and don't change errno.  */
          int saved_errno = errno;
          ignore_value (lchown (dst_name, -1, gid));
          errno = saved_errno;
        }
    }

  if (! chown_failure_ok (x))
    {
      error (0, errno, _("failed to preserve ownership for %s"),
             quoteaf (dst_name));
      if (x->require_preserve)
        return -1;
    }

  return 0;
}

/* Set the st_author field of DEST_DESC to the st_author field of
   SRC_SB. If DEST_DESC is undefined (-1), set the st_author field
   of DST_NAME instead.  DEST_DESC must refer to the same file as
   DEST_NAME if defined.  */

static void
set_author (const char *dst_name, int dest_desc, const struct stat *src_sb)
{
#if HAVE_STRUCT_STAT_ST_AUTHOR
  /* FIXME: Modify the following code so that it does not
     follow symbolic links.  */

  /* Preserve the st_author field.  */
```

```
  file_t file = (dest_desc < 0
                 ? file_name_lookup (dst_name, 0, 0)
                 : getdport (dest_desc));
  if (file == MACH_PORT_NULL)
    error (0, errno, _("failed to lookup file %s"), quoteaf (dst_name));
  else
    {
      error_t err = file_chauthor (file, src_sb->st_author);
      if (err)
        error (0, err, _("failed to preserve authorship for %s"),
               quoteaf (dst_name));
      mach_port_deallocate (mach_task_self (), file);
    }
#else
  (void) dst_name;
  (void) dest_desc;
  (void) src_sb;
#endif
}

/* Set the default security context for the process.  New files will
   have this security context set.  Also existing files can have their
   context adjusted based on this process context, by
   set_file_security_ctx() called with PROCESS_LOCAL=true.
   This should be called before files are created so there is no race
   where a file may be present without an appropriate security context.
   Based on CP_OPTIONS, diagnose warnings and fail when appropriate.
   Return FALSE on failure, TRUE on success.  */

bool
set_process_security_ctx (char const *src_name, char const *dst_name,
                          mode_t mode, bool new_dst, const struct cp_options *x)
{
  if (x->preserve_security_context)
    {
      /* Set the default context for the process to match the source.  */
      bool all_errors = !x->data_copy_required || x->require_preserve_context;
      bool some_errors = !all_errors && !x->reduce_diagnostics;
      char *con;

      if (0 <= lgetfilecon (src_name, &con))
        {
          if (setfscreatecon (con) < 0)
            {
              if (all_errors || (some_errors && !errno_unsupported (errno)))
                error (0, errno,
                       _("failed to set default file creation context to %s"),
                       quote (con));
              if (x->require_preserve_context)
                {
                  freecon (con);
                  return false;
                }
            }
          freecon (con);
        }
      else
        {
          if (all_errors || (some_errors && !errno_unsupported (errno)))
```

```
            {
              error (0, errno,
                     _("failed to get security context of %s"),
                     quoteaf (src_name));
            }
          if (x->require_preserve_context)
            return false;
        }
    }
  else if (x->set_security_context)
    {
      /* With -Z, adjust the default context for the process
         to have the type component adjusted as per the destination path.  */
      if (new_dst && defaultcon (dst_name, mode) < 0
          && ! ignorable_ctx_err (errno))
        {
          error (0, errno,
                 _("failed to set default file creation context for %s"),
                 quoteaf (dst_name));
        }
    }

  return true;
}

/* Reset the security context of DST_NAME, to that already set
   as the process default if PROCESS_LOCAL is true.  Otherwise
   adjust the type component of DST_NAME's security context as
   per the system default for that path.  Issue warnings upon
   failure, when allowed by various settings in CP_OPTIONS.
   Return FALSE on failure, TRUE on success.  */

bool
set_file_security_ctx (char const *dst_name, bool process_local,
                       bool recurse, const struct cp_options *x)
{
  bool all_errors = (!x->data_copy_required
                     || x->require_preserve_context);
  bool some_errors = !all_errors && !x->reduce_diagnostics;

  if (! restorecon (dst_name, recurse, process_local))
    {
      if (all_errors || (some_errors && !errno_unsupported (errno)))
        error (0, errno, _("failed to set the security context of %s"),
               quoteaf_n (0, dst_name));
      return false;
    }

  return true;
}

/* Change the file mode bits of the file identified by DESC or NAME to MODE.
   Use DESC if DESC is valid and fchmod is available, NAME otherwise.  */

static int
fchmod_or_lchmod (int desc, char const *name, mode_t mode)
{
#if HAVE_FCHMOD
  if (0 <= desc)
```

```
    return fchmod (desc, mode);
#endif
  return lchmod (name, mode);
}

#ifndef HAVE_STRUCT_STAT_ST_BLOCKS
# define HAVE_STRUCT_STAT_ST_BLOCKS 0
#endif

/* Use a heuristic to determine whether stat buffer SB comes from a file
   with sparse blocks.  If the file has fewer blocks than would normally
   be needed for a file of its size, then at least one of the blocks in
   the file is a hole.  In that case, return true.  */
static bool
is_probably_sparse (struct stat const *sb)
{
  return (HAVE_STRUCT_STAT_ST_BLOCKS
          && S_ISREG (sb->st_mode)
          && ST_NBLOCKS (*sb) < sb->st_size / ST_NBLOCKSIZE);
}


/* Copy a regular file from SRC_NAME to DST_NAME.
   If the source file contains holes, copies holes and blocks of zeros
   in the source file as holes in the destination file.
   (Holes are read as zeroes by the 'read' system call.)
   When creating the destination, use DST_MODE & ~OMITTED_PERMISSIONS
   as the third argument in the call to open, adding
   OMITTED_PERMISSIONS after copying as needed.
   X provides many option settings.
   Return true if successful.
   *NEW_DST is as in copy_internal.
   SRC_SB is the result of calling XSTAT (aka stat) on SRC_NAME.  */

static bool
copy_reg (char const *src_name, char const *dst_name,
          const struct cp_options *x,
          mode_t dst_mode, mode_t omitted_permissions, bool *new_dst,
          struct stat const *src_sb)
{
  char *buf;
  char *buf_alloc = NULL;
  char *name_alloc = NULL;
  int dest_desc;
  int dest_errno;
  int source_desc;
  mode_t src_mode = src_sb->st_mode;
  struct stat sb;
  struct stat src_open_sb;
  bool return_val = true;
  bool data_copy_required = x->data_copy_required;

  source_desc = open (src_name,
                      (O_RDONLY | O_BINARY
                       | (x->dereference == DEREF_NEVER ? O_NOFOLLOW : 0)));
  if (source_desc < 0)
    {
      error (0, errno, _("cannot open %s for reading"), quoteaf (src_name));
      return false;
```

```
  }

if (fstat (source_desc, &src_open_sb) != 0)
  {
    error (0, errno, _("cannot fstat %s"), quoteaf (src_name));
    return_val = false;
    goto close_src_desc;
  }

/* Compare the source dev/ino from the open file to the incoming,
   saved ones obtained via a previous call to stat.  */
if (! SAME_INODE (*src_sb, src_open_sb))
  {
    error (0, 0,
           _("skipping file %s, as it was replaced while being copied"),
           quoteaf (src_name));
    return_val = false;
    goto close_src_desc;
  }

/* The semantics of the following open calls are mandated
   by the specs for both cp and mv.  */
if (! *new_dst)
  {
    int open_flags =
      O_WRONLY | O_BINARY | (x->data_copy_required ? O_TRUNC : 0);
    dest_desc = open (dst_name, open_flags);
    dest_errno = errno;

    /* When using cp --preserve=context to copy to an existing destination,
       reset the context as per the default context, which has already been
       set according to the src.
       When using the mutually exclusive -Z option, then adjust the type of
       the existing context according to the system default for the dest.
       Note we set the context here, _after_ the file is opened, lest the
       new context disallow that.  */
    if ((x->set_security_context || x->preserve_security_context)
        && 0 <= dest_desc)
      {
        if (! set_file_security_ctx (dst_name, x->preserve_security_context,
                                     false, x))
          {
            if (x->require_preserve_context)
              {
                return_val = false;
                goto close_src_and_dst_desc;
              }
          }
      }

    if (dest_desc < 0 && x->unlink_dest_after_failed_open)
      {
        if (unlink (dst_name) != 0)
          {
            error (0, errno, _("cannot remove %s"), quoteaf (dst_name));
            return_val = false;
            goto close_src_desc;
          }
        if (x->verbose)
```

```
          printf (_("removed %s\n"), quoteaf (dst_name));

        /* Tell caller that the destination file was unlinked.  */
        *new_dst = true;

        /* Ensure there is no race where a file may be left without
           an appropriate security context.  */
        if (x->set_security_context)
          {
            if (! set_process_security_ctx (src_name, dst_name, dst_mode,
                                            *new_dst, x))
              {
                return_val = false;
                goto close_src_desc;
              }
          }
      }
  }

if (*new_dst)
  {
  open_with_O_CREAT:;

    int open_flags = O_WRONLY | O_CREAT | O_BINARY;
    dest_desc = open (dst_name, open_flags | O_EXCL,
                      dst_mode & ~omitted_permissions);
    dest_errno = errno;

    /* When trying to copy through a dangling destination symlink,
       the above open fails with EEXIST.  If that happens, and
       lstat'ing the DST_NAME shows that it is a symlink, then we
       have a problem: trying to resolve this dangling symlink to
       a directory/destination-entry pair is fundamentally racy,
       so punt.  If x->open_dangling_dest_symlink is set (cp sets
       that when POSIXLY_CORRECT is set in the environment), simply
       call open again, but without O_EXCL (potentially dangerous).
       If not, fail with a diagnostic.  These shenanigans are necessary
       only when copying, i.e., not in move_mode.  */
    if (dest_desc < 0 && dest_errno == EEXIST && ! x->move_mode)
      {
        struct stat dangling_link_sb;
        if (lstat (dst_name, &dangling_link_sb) == 0
            && S_ISLNK (dangling_link_sb.st_mode))
          {
            if (x->open_dangling_dest_symlink)
              {
                dest_desc = open (dst_name, open_flags,
                                  dst_mode & ~omitted_permissions);
                dest_errno = errno;
              }
            else
              {
                error (0, 0, _("not writing through dangling symlink %s"),
                       quoteaf (dst_name));
                return_val = false;
                goto close_src_desc;
              }
          }
      }
```

```
    /* Improve quality of diagnostic when a nonexistent dst_name
       ends in a slash and open fails with errno == EISDIR.  */
    if (dest_desc < 0 && dest_errno == EISDIR
        && *dst_name && dst_name[strlen (dst_name) - 1] == '/')
      dest_errno = ENOTDIR;
  }
else
  {
    omitted_permissions = 0;
  }

if (dest_desc < 0)
  {
    /* If we've just failed due to ENOENT for an ostensibly preexisting
       destination (*new_dst was 0), that's a bit of a contradiction/race:
       the prior stat/lstat said the file existed (*new_dst was 0), yet
       the subsequent open-existing-file failed with ENOENT.  With NFS,
       the race window is wider still, since its meta-data caching tends
       to make the stat succeed for a just-removed remote file, while the
       more-definitive initial open call will fail with ENOENT.  When this
       situation arises, we attempt to open again, but this time with
       O_CREAT.  Do this only when not in move-mode, since when handling
       a cross-device move, we must never open an existing destination.  */
    if (dest_errno == ENOENT && ! *new_dst && ! x->move_mode)
      {
        *new_dst = 1;
        goto open_with_O_CREAT;
      }

    /* Otherwise, it's an error.  */
    error (0, dest_errno, _("cannot create regular file %s"),
           quoteaf (dst_name));
    return_val = false;
    goto close_src_desc;
  }

if (fstat (dest_desc, &sb) != 0)
  {
    error (0, errno, _("cannot fstat %s"), quoteaf (dst_name));
    return_val = false;
    goto close_src_and_dst_desc;
  }

/* --attributes-only overrides --reflink.  */
if (data_copy_required && x->reflink_mode)
  {
    bool clone_ok = clone_file (dest_desc, source_desc) == 0;
    if (clone_ok || x->reflink_mode == REFLINK_ALWAYS)
      {
        if (!clone_ok)
          {
            error (0, errno, _("failed to clone %s from %s"),
                   quoteaf_n (0, dst_name), quoteaf_n (1, src_name));
            return_val = false;
            goto close_src_and_dst_desc;
          }
        data_copy_required = false;
      }
```

```
  }

if (data_copy_required)
  {
    /* Choose a suitable buffer size; it may be adjusted later.  */
    size_t buf_alignment = getpagesize ();
    size_t buf_size = io_blksize (sb);
    size_t hole_size = ST_BLKSIZE (sb);

    fdadvise (source_desc, 0, 0, FADVISE_SEQUENTIAL);

    /* Deal with sparse files.  */
    bool make_holes = false;
    bool sparse_src = is_probably_sparse (&src_open_sb);

    if (S_ISREG (sb.st_mode))
      {
        /* Even with --sparse=always, try to create holes only
           if the destination is a regular file.  */
        if (x->sparse_mode == SPARSE_ALWAYS)
          make_holes = true;

        /* Use a heuristic to determine whether SRC_NAME contains any sparse
           blocks.  If the file has fewer blocks than would normally be
           needed for a file of its size, then at least one of the blocks in
           the file is a hole.  */
        if (x->sparse_mode == SPARSE_AUTO && sparse_src)
          make_holes = true;
      }

    /* If not making a sparse file, try to use a more-efficient
       buffer size.  */
    if (! make_holes)
      {
        /* Compute the least common multiple of the input and output
           buffer sizes, adjusting for outlandish values.  */
        size_t blcm_max = MIN (SIZE_MAX, SSIZE_MAX) - buf_alignment;
        size_t blcm = buffer_lcm (io_blksize (src_open_sb), buf_size,
                                  blcm_max);

        /* Do not bother with a buffer larger than the input file, plus one
           byte to make sure the file has not grown while reading it.  */
        if (S_ISREG (src_open_sb.st_mode) && src_open_sb.st_size < buf_size)
          buf_size = src_open_sb.st_size + 1;

        /* However, stick with a block size that is a positive multiple of
           blcm, overriding the above adjustments.  Watch out for
           overflow.  */
        buf_size += blcm - 1;
        buf_size -= buf_size % blcm;
        if (buf_size == 0 || blcm_max < buf_size)
          buf_size = blcm;
      }

    buf_alloc = xmalloc (buf_size + buf_alignment);
    buf = ptr_align (buf_alloc, buf_alignment);

    if (sparse_src)
      {
```

```
          bool normal_copy_required;

          /* Perform an efficient extent-based copy, falling back to the
             standard copy only if the initial extent scan fails.  If the
             '--sparse=never' option is specified, write all data but use
             any extents to read more efficiently.  */
          if (extent_copy (source_desc, dest_desc, buf, buf_size, hole_size,
                           src_open_sb.st_size,
                           make_holes ? x->sparse_mode : SPARSE_NEVER,
                           src_name, dst_name, &normal_copy_required))
            goto preserve_metadata;

          if (! normal_copy_required)
            {
              return_val = false;
              goto close_src_and_dst_desc;
            }
        }

      off_t n_read;
      bool wrote_hole_at_eof;
      if (! sparse_copy (source_desc, dest_desc, buf, buf_size,
                         make_holes ? hole_size : 0,
                         x->sparse_mode == SPARSE_ALWAYS, src_name, dst_name,
                         UINTMAX_MAX, &n_read,
                         &wrote_hole_at_eof))
        {
          return_val = false;
          goto close_src_and_dst_desc;
        }
      else if (wrote_hole_at_eof && ftruncate (dest_desc, n_read) < 0)
        {
          error (0, errno, _("failed to extend %s"), quoteaf (dst_name));
          return_val = false;
          goto close_src_and_dst_desc;
        }
    }

preserve_metadata:
  if (x->preserve_timestamps)
    {
      struct timespec timespec[2];
      timespec[0] = get_stat_atime (src_sb);
      timespec[1] = get_stat_mtime (src_sb);

      if (fdutimens (dest_desc, dst_name, timespec) != 0)
        {
          error (0, errno, _("preserving times for %s"), quoteaf (dst_name));
          if (x->require_preserve)
            {
              return_val = false;
              goto close_src_and_dst_desc;
            }
        }
    }

  /* Set ownership before xattrs as changing owners will
     clear capabilities.  */
  if (x->preserve_ownership && ! SAME_OWNER_AND_GROUP (*src_sb, sb))
```

```
  {
    switch (set_owner (x, dst_name, dest_desc, src_sb, *new_dst, &sb))
      {
      case -1:
        return_val = false;
        goto close_src_and_dst_desc;

      case 0:
        src_mode &= ~ (S_ISUID | S_ISGID | S_ISVTX);
        break;
      }
  }

/* To allow copying xattrs on read-only files, temporarily chmod u+rw.
   This workaround is required as an inode permission check is done
   by xattr_permission() in fs/xattr.c of the GNU/Linux kernel tree.  */
if (x->preserve_xattr)
  {
    bool access_changed = false;

    if (!(sb.st_mode & S_IWUSR) && geteuid () != ROOT_UID)
      access_changed = fchmod_or_lchmod (dest_desc, dst_name, 0600) == 0;

    if (!copy_attr (src_name, source_desc, dst_name, dest_desc, x)
        && x->require_preserve_xattr)
      return_val = false;

    if (access_changed)
      fchmod_or_lchmod (dest_desc, dst_name, dst_mode & ~omitted_permissions);
  }

set_author (dst_name, dest_desc, src_sb);

if (x->preserve_mode || x->move_mode)
  {
    if (copy_acl (src_name, source_desc, dst_name, dest_desc, src_mode) != 0
        && x->require_preserve)
      return_val = false;
  }
else if (x->set_mode)
  {
    if (set_acl (dst_name, dest_desc, x->mode) != 0)
      return_val = false;
  }
else if (x->explicit_no_preserve_mode)
  {
    if (set_acl (dst_name, dest_desc, 0666 & ~cached_umask ()) != 0)
      return_val = false;
  }
else if (omitted_permissions)
  {
    omitted_permissions &= ~ cached_umask ();
    if (omitted_permissions
        && fchmod_or_lchmod (dest_desc, dst_name, dst_mode) != 0)
      {
        error (0, errno, _("preserving permissions for %s"),
               quoteaf (dst_name));
        if (x->require_preserve)
          return_val = false;
```

```
        }
    }

close_src_and_dst_desc:
  if (close (dest_desc) < 0)
    {
      error (0, errno, _("failed to close %s"), quoteaf (dst_name));
      return_val = false;
    }
close_src_desc:
  if (close (source_desc) < 0)
    {
      error (0, errno, _("failed to close %s"), quoteaf (src_name));
      return_val = false;
    }

  free (buf_alloc);
  free (name_alloc);
  return return_val;
}

/* Return true if it's ok that the source and destination
   files are the 'same' by some measure.  The goal is to avoid
   making the 'copy' operation remove both copies of the file
   in that case, while still allowing the user to e.g., move or
   copy a regular file onto a symlink that points to it.
   Try to minimize the cost of this function in the common case.
   Set *RETURN_NOW if we've determined that the caller has no more
   work to do and should return successfully, right away.  */

static bool
same_file_ok (char const *src_name, struct stat const *src_sb,
              char const *dst_name, struct stat const *dst_sb,
              const struct cp_options *x, bool *return_now)
{
  const struct stat *src_sb_link;
  const struct stat *dst_sb_link;
  struct stat tmp_dst_sb;
  struct stat tmp_src_sb;

  bool same_link;
  bool same = SAME_INODE (*src_sb, *dst_sb);

  *return_now = false;

  /* FIXME: this should (at the very least) be moved into the following
     if-block.  More likely, it should be removed, because it inhibits
     making backups.  But removing it will result in a change in behavior
     that will probably have to be documented -- and tests will have to
     be updated.  */
  if (same && x->hard_link)
    {
      *return_now = true;
      return true;
    }

  if (x->dereference == DEREF_NEVER)
    {
      same_link = same;
```

```
    /* If both the source and destination files are symlinks (and we'll
       know this here IFF preserving symlinks), then it's usually ok
       when they are distinct.  */
    if (S_ISLNK (src_sb->st_mode) && S_ISLNK (dst_sb->st_mode))
      {
        bool sn = same_name (src_name, dst_name);
        if ( ! sn)
          {
            /* It's fine when we're making any type of backup.  */
            if (x->backup_type != no_backups)
              return true;

            /* Here we have two symlinks that are hard-linked together,
               and we're not making backups.  In this unusual case, simply
               returning true would lead to mv calling "rename(A,B)",
               which would do nothing and return 0.  */
            if (same_link)
              {
                *return_now = true;
                return ! x->move_mode;
              }
          }

        return ! sn;
      }

    src_sb_link = src_sb;
    dst_sb_link = dst_sb;
  }
else
  {
    if (!same)
      return true;

    if (lstat (dst_name, &tmp_dst_sb) != 0
        || lstat (src_name, &tmp_src_sb) != 0)
      return true;

    src_sb_link = &tmp_src_sb;
    dst_sb_link = &tmp_dst_sb;

    same_link = SAME_INODE (*src_sb_link, *dst_sb_link);

    /* If both are symlinks, then it's ok, but only if the destination
       will be unlinked before being opened.  This is like the test
       above, but with the addition of the unlink_dest_before_opening
       conjunct because otherwise, with two symlinks to the same target,
       we'd end up truncating the source file.  */
    if (S_ISLNK (src_sb_link->st_mode) && S_ISLNK (dst_sb_link->st_mode)
        && x->unlink_dest_before_opening)
      return true;
  }

/* The backup code ensures there's a copy, so it's usually ok to
   remove any destination file.  One exception is when both
   source and destination are the same directory entry.  In that
   case, moving the destination file aside (in making the backup)
   would also rename the source file and result in an error.  */
```

```
  if (x->backup_type != no_backups)
    {
      if (!same_link)
        {
          /* In copy mode when dereferencing symlinks, if the source is a
             symlink and the dest is not, then backing up the destination
             (moving it aside) would make it a dangling symlink, and the
             subsequent attempt to open it in copy_reg would fail with
             a misleading diagnostic.  Avoid that by returning zero in
             that case so the caller can make cp (or mv when it has to
             resort to reading the source file) fail now.  */

          /* FIXME-note: even with the following kludge, we can still provoke
             the offending diagnostic.  It's just a little harder to do :-)
             $ rm -f a b c; touch c; ln -s c b; ln -s b a; cp -b a b
             cp: cannot open 'a' for reading: No such file or directory
             That's misleading, since a subsequent 'ls' shows that 'a'
             is still there.
             One solution would be to open the source file *before* moving
             aside the destination, but that'd involve a big rewrite. */
          if ( ! x->move_mode
               && x->dereference != DEREF_NEVER
               && S_ISLNK (src_sb_link->st_mode)
               && ! S_ISLNK (dst_sb_link->st_mode))
            return false;

          return true;
        }

      /* FIXME: What about case insensitive file systems ?  */
      return ! same_name (src_name, dst_name);
    }

#if 0
  /* FIXME: use or remove */

  /* If we're making a backup, we'll detect the problem case in
     copy_reg because SRC_NAME will no longer exist.  Allowing
     the test to be deferred lets cp do some useful things.
     But when creating hardlinks and SRC_NAME is a symlink
     but DST_NAME is not we must test anyway.  */
  if (x->hard_link
      || !S_ISLNK (src_sb_link->st_mode)
      || S_ISLNK (dst_sb_link->st_mode))
    return true;

  if (x->dereference != DEREF_NEVER)
    return true;
#endif

  if (x->move_mode || x->unlink_dest_before_opening)
    {
      /* They may refer to the same file if we're in move mode and the
         target is a symlink.  That is ok, since we remove any existing
         destination file before opening it -- via 'rename' if they're on
         the same file system, via 'unlink (DST_NAME)' otherwise.  */
      if (S_ISLNK (dst_sb_link->st_mode))
        return true;
```

```
    /* It's not ok if they're distinct hard links to the same file as
       this causes a race condition and we may lose data in this case.  */
    if (same_link
        && 1 < dst_sb_link->st_nlink
        && ! same_name (src_name, dst_name))
      return ! x->move_mode;
  }

/* If neither is a symlink, then it's ok as long as they aren't
   hard links to the same file.  */
if (!S_ISLNK (src_sb_link->st_mode) && !S_ISLNK (dst_sb_link->st_mode))
  {
    if (!SAME_INODE (*src_sb_link, *dst_sb_link))
      return true;

    /* If they are the same file, it's ok if we're making hard links.  */
    if (x->hard_link)
      {
        *return_now = true;
        return true;
      }
  }

/* At this point, it is normally an error (data loss) to move a symlink
   onto its referent, but in at least one narrow case, it is not:
   In move mode, when
   1) src is a symlink,
   2) dest has a link count of 2 or more and
   3) dest and the referent of src are not the same directory entry,
   then it's ok, since while we'll lose one of those hard links,
   src will still point to a remaining link.
   Note that technically, condition #3 obviates condition #2, but we
   retain the 1 < st_nlink condition because that means fewer invocations
   of the more expensive #3.

   Given this,
     $ touch f && ln f l && ln -s f s
     $ ls -og f l s
     -rw-------. 2  0 Jan  4 22:46 f
     -rw-------. 2  0 Jan  4 22:46 l
     lrwxrwxrwx. 1  1 Jan  4 22:46 s -> f
   this must fail: mv s f
   this must succeed: mv s l */
if (x->move_mode
    && S_ISLNK (src_sb->st_mode)
    && 1 < dst_sb_link->st_nlink)
  {
    char *abs_src = canonicalize_file_name (src_name);
    if (abs_src)
      {
        bool result = ! same_name (abs_src, dst_name);
        free (abs_src);
        return result;
      }
  }

/* It's ok to remove a destination symlink.  But that works only
   when creating symbolic links, or when the source and destination
   are on the same file system and when creating hard links or when
```

```
     unlinking before opening the destination.  */
  if (x->symbolic_link
      || ((x->hard_link || x->unlink_dest_before_opening)
          && S_ISLNK (dst_sb_link->st_mode)))
    return dst_sb_link->st_dev == src_sb_link->st_dev;

  if (x->dereference == DEREF_NEVER)
    {
      if ( ! S_ISLNK (src_sb_link->st_mode))
        tmp_src_sb = *src_sb_link;
      else if (stat (src_name, &tmp_src_sb) != 0)
        return true;

      if ( ! S_ISLNK (dst_sb_link->st_mode))
        tmp_dst_sb = *dst_sb_link;
      else if (stat (dst_name, &tmp_dst_sb) != 0)
        return true;

      if ( ! SAME_INODE (tmp_src_sb, tmp_dst_sb))
        return true;

      /* FIXME: shouldn't this be testing whether we're making symlinks?  */
      if (x->hard_link)
        {
          *return_now = true;
          return true;
        }
    }

  return false;
}

/* Return true if FILE, with mode MODE, is writable in the sense of 'mv'.
   Always consider a symbolic link to be writable.  */
static bool
writable_destination (char const *file, mode_t mode)
{
  return (S_ISLNK (mode)
          || can_write_any_file ()
          || euidaccess (file, W_OK) == 0);
}

static bool
overwrite_ok (struct cp_options const *x, char const *dst_name,
              struct stat const *dst_sb)
{
  if (! writable_destination (dst_name, dst_sb->st_mode))
    {
      char perms[12];           /* "-rwxrwxrwx " ls-style modes. */
      strmode (dst_sb->st_mode, perms);
      perms[10] = '\0';
      fprintf (stderr,
               (x->move_mode || x->unlink_dest_before_opening
                || x->unlink_dest_after_failed_open)
               ? _("%s: replace %s, overriding mode %04lo (%s)? ")
               : _("%s: unwritable %s (mode %04lo, %s); try anyway? "),
               program_name, quoteaf (dst_name),
               (unsigned long int) (dst_sb->st_mode & CHMOD_MODE_BITS),
               &perms[1]);
```

```
    }
  else
    {
      fprintf (stderr, _("%s: overwrite %s? "),
               program_name, quoteaf (dst_name));
    }

  return yesno ();
}

/* Initialize the hash table implementing a set of F_triple entries
   corresponding to destination files.  */
extern void
dest_info_init (struct cp_options *x)
{
  x->dest_info
    = hash_initialize (DEST_INFO_INITIAL_CAPACITY,
                       NULL,
                       triple_hash,
                       triple_compare,
                       triple_free);
}

/* Initialize the hash table implementing a set of F_triple entries
   corresponding to source files listed on the command line.  */
extern void
src_info_init (struct cp_options *x)
{

  /* Note that we use triple_hash_no_name here.
     Contrast with the use of triple_hash above.
     That is necessary because a source file may be specified
     in many different ways.  We want to warn about this
       cp a a d/
     as well as this:
       cp a ./a d/
  */
  x->src_info
    = hash_initialize (DEST_INFO_INITIAL_CAPACITY,
                       NULL,
                       triple_hash_no_name,
                       triple_compare,
                       triple_free);
}

/* When effecting a move (e.g., for mv(1)), and given the name DST_NAME
   of the destination and a corresponding stat buffer, DST_SB, return
   true if the logical 'move' operation should _not_ proceed.
   Otherwise, return false.
   Depending on options specified in X, this code may issue an
   interactive prompt asking whether it's ok to overwrite DST_NAME.  */
static bool
abandon_move (const struct cp_options *x,
              char const *dst_name,
              struct stat const *dst_sb)
{
  assert (x->move_mode);
  return (x->interactive == I_ALWAYS_NO
          || ((x->interactive == I_ASK_USER
```

```
               || (x->interactive == I_UNSPECIFIED
                   && x->stdin_tty
                   && ! writable_destination (dst_name, dst_sb->st_mode)))
              && ! overwrite_ok (x, dst_name, dst_sb)));
}

/* Print --verbose output on standard output, e.g. 'new' -> 'old'.
   If BACKUP_DST_NAME is non-NULL, then also indicate that it is
   the name of a backup file.  */
static void
emit_verbose (char const *src, char const *dst, char const *backup_dst_name)
{
  printf ("%s -> %s", quoteaf_n (0, src), quoteaf_n (1, dst));
  if (backup_dst_name)
    printf (_(" (backup: %s)"), quoteaf (backup_dst_name));
  putchar ('\n');
}

/* A wrapper around "setfscreatecon (NULL)" that exits upon failure.  */
static void
restore_default_fscreatecon_or_die (void)
{
  if (setfscreatecon (NULL) != 0)
    die (EXIT_FAILURE, errno,
         _("failed to restore the default file creation context"));
}

/* Create a hard link DST_NAME to SRC_NAME, honoring the REPLACE, VERBOSE and
   DEREFERENCE settings.  Return true upon success.  Otherwise, diagnose the
   failure and return false.  If SRC_NAME is a symbolic link, then it will not
   be followed unless DEREFERENCE is true.
   If the system doesn't support hard links to symbolic links, then DST_NAME
   will be created as a symbolic link to SRC_NAME.  */
static bool
create_hard_link (char const *src_name, char const *dst_name,
                  bool replace, bool verbose, bool dereference)
{
  int status = force_linkat (AT_FDCWD, src_name, AT_FDCWD, dst_name,
                             dereference ? AT_SYMLINK_FOLLOW : 0,
                             replace);
  if (status < 0)
    {
      error (0, errno, _("cannot create hard link %s to %s"),
             quoteaf_n (0, dst_name), quoteaf_n (1, src_name));
      return false;
    }
  if (0 < status && verbose)
    printf (_("removed %s\n"), quoteaf (dst_name));
  return true;
}

/* Return true if the current file should be (tried to be) dereferenced:
   either for DEREF_ALWAYS or for DEREF_COMMAND_LINE_ARGUMENTS in the case
   where the current file is a COMMAND_LINE_ARG; otherwise return false.  */
static inline bool _GL_ATTRIBUTE_PURE
should_dereference (const struct cp_options *x, bool command_line_arg)
{
  return x->dereference == DEREF_ALWAYS
         || (x->dereference == DEREF_COMMAND_LINE_ARGUMENTS
```

```
             && command_line_arg);
}

/* Return true if the source file with basename SRCBASE and status SRC_ST
   is likely to be the simple backup file for DST_NAME.  */
static bool
source_is_dst_backup (char const *srcbase, struct stat const *src_st,
                      char const *dst_name)
{
  size_t srcbaselen = strlen (srcbase);
  char const *dstbase = last_component (dst_name);
  size_t dstbaselen = strlen (dstbase);
  size_t suffixlen = strlen (simple_backup_suffix);
  if (! (srcbaselen == dstbaselen + suffixlen
         && memcmp (srcbase, dstbase, dstbaselen) == 0
         && STREQ (srcbase + dstbaselen, simple_backup_suffix)))
    return false;
  size_t dstlen = strlen (dst_name);
  char *dst_back = xmalloc (dstlen + suffixlen + 1);
  strcpy (mempcpy (dst_back, dst_name, dstlen), simple_backup_suffix);
  struct stat dst_back_sb;
  int dst_back_status = stat (dst_back, &dst_back_sb);
  free (dst_back);
  return dst_back_status == 0 && SAME_INODE (*src_st, dst_back_sb);
}

/* Copy the file SRC_NAME to the file DST_NAME.  The files may be of
   any type.  NEW_DST should be true if the file DST_NAME cannot
   exist because its parent directory was just created; NEW_DST should
   be false if DST_NAME might already exist.  A non-null PARENT describes the
   parent directory.  ANCESTORS points to a linked, null terminated list of
   devices and inodes of parent directories of SRC_NAME.  COMMAND_LINE_ARG
   is true iff SRC_NAME was specified on the command line.
   FIRST_DIR_CREATED_PER_COMMAND_LINE_ARG is both input and output.
   Set *COPY_INTO_SELF if SRC_NAME is a parent of (or the
   same as) DST_NAME; otherwise, clear it.
   Return true if successful.  */
static bool
copy_internal (char const *src_name, char const *dst_name,
               bool new_dst,
               struct stat const *parent,
               struct dir_list *ancestors,
               const struct cp_options *x,
               bool command_line_arg,
               bool *first_dir_created_per_command_line_arg,
               bool *copy_into_self,
               bool *rename_succeeded)
{
  struct stat src_sb;
  struct stat dst_sb;
  mode_t src_mode;
  mode_t dst_mode IF_LINT ( = 0);
  mode_t dst_mode_bits;
  mode_t omitted_permissions;
  bool restore_dst_mode = false;
  char *earlier_file = NULL;
  char *dst_backup = NULL;
  bool delayed_ok;
  bool copied_as_regular = false;
```

```
bool dest_is_symlink = false;
bool have_dst_lstat = false;

if (x->move_mode && rename_succeeded)
  *rename_succeeded = false;

*copy_into_self = false;

if (XSTAT (x, src_name, &src_sb) != 0)
  {
    error (0, errno, _("cannot stat %s"), quoteaf (src_name));
    return false;
  }

src_mode = src_sb.st_mode;

if (S_ISDIR (src_mode) && !x->recursive)
  {
    error (0, 0, ! x->install_mode /* cp */
                 ? _("-r not specified; omitting directory %s")
                 : _("omitting directory %s"),
           quoteaf (src_name));
    return false;
  }

/* Detect the case in which the same source file appears more than
   once on the command line and no backup option has been selected.
   If so, simply warn and don't copy it the second time.
   This check is enabled only if x->src_info is non-NULL.  */
if (command_line_arg)
  {
    if ( ! S_ISDIR (src_sb.st_mode)
         && x->backup_type == no_backups
         && seen_file (x->src_info, src_name, &src_sb))
      {
        error (0, 0, _("warning: source file %s specified more than once"),
               quoteaf (src_name));
        return true;
      }

    record_file (x->src_info, src_name, &src_sb);
  }

bool dereference = should_dereference (x, command_line_arg);

if (!new_dst)
  {
    /* Regular files can be created by writing through symbolic
       links, but other files cannot.  So use stat on the
       destination when copying a regular file, and lstat otherwise.
       However, if we intend to unlink or remove the destination
       first, use lstat, since a copy won't actually be made to the
       destination in that case.  */
    bool use_stat =
      ((S_ISREG (src_mode)
        || (x->copy_as_regular
            && ! (S_ISDIR (src_mode) || S_ISLNK (src_mode))))
       && ! (x->move_mode || x->symbolic_link || x->hard_link
             || x->backup_type != no_backups
```

```
         || x->unlink_dest_before_opening));
if ((use_stat
     ? stat (dst_name, &dst_sb)
     : lstat (dst_name, &dst_sb))
    != 0)
  {
    if (errno != ENOENT)
      {
        error (0, errno, _("cannot stat %s"), quoteaf (dst_name));
        return false;
      }
    else
      {
        new_dst = true;
      }
  }
else
  { /* Here, we know that dst_name exists, at least to the point
       that it is stat'able or lstat'able.  */
    bool return_now;

    have_dst_lstat = !use_stat;
    if (! same_file_ok (src_name, &src_sb, dst_name, &dst_sb,
                        x, &return_now))
      {
        error (0, 0, _("%s and %s are the same file"),
               quoteaf_n (0, src_name), quoteaf_n (1, dst_name));
        return false;
      }

    if (!S_ISDIR (src_mode) && x->update)
      {
        /* When preserving timestamps (but not moving within a file
           system), don't worry if the destination timestamp is
           less than the source merely because of timestamp
           truncation.  */
        int options = ((x->preserve_timestamps
                        && ! (x->move_mode
                              && dst_sb.st_dev == src_sb.st_dev))
                       ? UTIMECMP_TRUNCATE_SOURCE
                       : 0);

        if (0 <= utimecmp (dst_name, &dst_sb, &src_sb, options))
          {
            /* We're using --update and the destination is not older
               than the source, so do not copy or move.  Pretend the
               rename succeeded, so the caller (if it's mv) doesn't
               end up removing the source file.  */
            if (rename_succeeded)
              *rename_succeeded = true;

            /* However, we still must record that we've processed
               this src/dest pair, in case this source file is
               hard-linked to another one.  In that case, we'll use
               the mapping information to link the corresponding
               destination names.  */
            earlier_file = remember_copied (dst_name, src_sb.st_ino,
                                            src_sb.st_dev);
            if (earlier_file)
```

```
          {
            /* Note we currently replace DST_NAME unconditionally,
               even if it was a newer separate file.  */
            if (! create_hard_link (earlier_file, dst_name, true,
                                    x->verbose, dereference))
              {
                goto un_backup;
              }
          }

        return true;
      }
  }

/* When there is an existing destination file, we may end up
   returning early, and hence not copying/moving the file.
   This may be due to an interactive 'negative' reply to the
   prompt about the existing file.  It may also be due to the
   use of the --no-clobber option.

   cp and mv treat -i and -f differently.  */
if (x->move_mode)
  {
    if (abandon_move (x, dst_name, &dst_sb))
      {
        /* Pretend the rename succeeded, so the caller (mv)
           doesn't end up removing the source file.  */
        if (rename_succeeded)
          *rename_succeeded = true;
        return true;
      }
  }
else
  {
    if (! S_ISDIR (src_mode)
        && (x->interactive == I_ALWAYS_NO
            || (x->interactive == I_ASK_USER
                && ! overwrite_ok (x, dst_name, &dst_sb))))
      return true;
  }

if (return_now)
  return true;

if (!S_ISDIR (dst_sb.st_mode))
  {
    if (S_ISDIR (src_mode))
      {
        if (x->move_mode && x->backup_type != no_backups)
          {
            /* Moving a directory onto an existing
               non-directory is ok only with --backup.  */
          }
        else
          {
            error (0, 0,
             _("cannot overwrite non-directory %s with directory %s"),
                   quoteaf_n (0, dst_name), quoteaf_n (1, src_name));
            return false;
```

```
          }
      }

    /* Don't let the user destroy their data, even if they try hard:
       This mv command must fail (likewise for cp):
         rm -rf a b c; mkdir a b c; touch a/f b/f; mv a/f b/f c
       Otherwise, the contents of b/f would be lost.
       In the case of 'cp', b/f would be lost if the user simulated
       a move using cp and rm.
       Note that it works fine if you use --backup=numbered.  */
    if (command_line_arg
        && x->backup_type != numbered_backups
        && seen_file (x->dest_info, dst_name, &dst_sb))
      {
        error (0, 0,
               _("will not overwrite just-created %s with %s"),
               quoteaf_n (0, dst_name), quoteaf_n (1, src_name));
        return false;
      }
  }

if (!S_ISDIR (src_mode))
  {
    if (S_ISDIR (dst_sb.st_mode))
      {
        if (x->move_mode && x->backup_type != no_backups)
          {
            /* Moving a non-directory onto an existing
               directory is ok only with --backup.  */
          }
        else
          {
            error (0, 0,
               _("cannot overwrite directory %s with non-directory"),
                   quoteaf (dst_name));
            return false;
          }
      }
  }

if (x->move_mode)
  {
    /* Don't allow user to move a directory onto a non-directory.  */
    if (S_ISDIR (src_sb.st_mode) && !S_ISDIR (dst_sb.st_mode)
        && x->backup_type == no_backups)
      {
        error (0, 0,
             _("cannot move directory onto non-directory: %s -> %s"),
               quotef_n (0, src_name), quotef_n (0, dst_name));
        return false;
      }
  }

char const *srcbase;
if (x->backup_type != no_backups
    /* Don't try to back up a destination if the last
       component of src_name is "." or "..".  */
    && ! dot_or_dotdot (srcbase = last_component (src_name))
    /* Create a backup of each destination directory in move mode,
```

```
           but not in copy mode.  FIXME: it might make sense to add an
           option to suppress backup creation also for move mode.
           That would let one use mv to merge new content into an
           existing hierarchy.  */
        && (x->move_mode || ! S_ISDIR (dst_sb.st_mode)))
      {
        /* Fail if creating the backup file would likely destroy
           the source file.  Otherwise, the commands:
           cd /tmp; rm -f a a~; : > a; echo A > a~; cp --b=simple a~ a
           would leave two zero-length files: a and a~.  */
        if (x->backup_type != numbered_backups
            && source_is_dst_backup (srcbase, &src_sb, dst_name))
          {
            const char *fmt;
            fmt = (x->move_mode
           ? _("backing up %s might destroy source;  %s not moved")
           : _("backing up %s might destroy source;  %s not copied"));
            error (0, 0, fmt,
                   quoteaf_n (0, dst_name),
                   quoteaf_n (1, src_name));
            return false;
          }

        char *tmp_backup = backup_file_rename (dst_name, x->backup_type);

        /* FIXME: use fts:
           Using alloca for a file name that may be arbitrarily
           long is not recommended.  In fact, even forming such a name
           should be discouraged.  Eventually, this code will be rewritten
           to use fts, so using alloca here will be less of a problem.  */
        if (tmp_backup)
          {
            ASSIGN_STRDUPA (dst_backup, tmp_backup);
            free (tmp_backup);
          }
        else if (errno != ENOENT)
          {
            error (0, errno, _("cannot backup %s"), quoteaf (dst_name));
            return false;
          }
        new_dst = true;
      }
    else if (! S_ISDIR (dst_sb.st_mode)
             /* Never unlink dst_name when in move mode.  */
             && ! x->move_mode
             && (x->unlink_dest_before_opening
                 || (x->preserve_links && 1 < dst_sb.st_nlink)
                 || (x->dereference == DEREF_NEVER
                     && ! S_ISREG (src_sb.st_mode))
                ))
      {
        if (unlink (dst_name) != 0 && errno != ENOENT)
          {
            error (0, errno, _("cannot remove %s"), quoteaf (dst_name));
            return false;
          }
        new_dst = true;
        if (x->verbose)
          printf (_("removed %s\n"), quoteaf (dst_name));
```

```
          }
        }
    }

/* Ensure we don't try to copy through a symlink that was
   created by a prior call to this function.  */
if (command_line_arg
    && x->dest_info
    && ! x->move_mode
    && x->backup_type == no_backups)
  {
    bool lstat_ok = true;
    struct stat tmp_buf;
    struct stat *dst_lstat_sb;

    /* If we called lstat above, good: use that data.
       Otherwise, call lstat here, in case dst_name is a symlink.  */
    if (have_dst_lstat)
      dst_lstat_sb = &dst_sb;
    else
      {
        if (lstat (dst_name, &tmp_buf) == 0)
          dst_lstat_sb = &tmp_buf;
        else
          lstat_ok = false;
      }

    /* Never copy through a symlink we've just created.  */
    if (lstat_ok
        && S_ISLNK (dst_lstat_sb->st_mode)
        && seen_file (x->dest_info, dst_name, dst_lstat_sb))
      {
        error (0, 0,
               _("will not copy %s through just-created symlink %s"),
               quoteaf_n (0, src_name), quoteaf_n (1, dst_name));
        return false;
      }
  }

/* If the source is a directory, we don't always create the destination
   directory.  So --verbose should not announce anything until we're
   sure we'll create a directory.  Also don't announce yet when moving
   so we can distinguish renames versus copies.  */
if (x->verbose && !x->move_mode && !S_ISDIR (src_mode))
  emit_verbose (src_name, dst_name, dst_backup);

/* Associate the destination file name with the source device and inode
   so that if we encounter a matching dev/ino pair in the source tree
   we can arrange to create a hard link between the corresponding names
   in the destination tree.

   When using the --link (-l) option, there is no need to take special
   measures, because (barring race conditions) files that are hard-linked
   in the source tree will also be hard-linked in the destination tree.

   Sometimes, when preserving links, we have to record dev/ino even
   though st_nlink == 1:
   - when in move_mode, since we may be moving a group of N hard-linked
      files (via two or more command line arguments) to a different
```

```
      partition; the links may be distributed among the command line
      arguments (possibly hierarchies) so that the link count of
      the final, once-linked source file is reduced to 1 when it is
      considered below.  But in this case (for mv) we don't need to
      incur the expense of recording the dev/ino => name mapping; all we
      really need is a lookup, to see if the dev/ino pair has already
      been copied.
   - when using -H and processing a command line argument;
      that command line argument could be a symlink pointing to another
      command line argument.  With 'cp -H --preserve=link', we hard-link
      those two destination files.
   - likewise for -L except that it applies to all files, not just
      command line arguments.

   Also, with --recursive, record dev/ino of each command-line directory.
   We'll use that info to detect this problem: cp -R dir dir.  */

if (x->recursive && S_ISDIR (src_mode))
  {
    if (command_line_arg)
      earlier_file = remember_copied (dst_name, src_sb.st_ino, src_sb.st_dev);
    else
      earlier_file = src_to_dest_lookup (src_sb.st_ino, src_sb.st_dev);
  }
else if (x->move_mode && src_sb.st_nlink == 1)
  {
    earlier_file = src_to_dest_lookup (src_sb.st_ino, src_sb.st_dev);
  }
else if (x->preserve_links
         && !x->hard_link
         && (1 < src_sb.st_nlink
             || (command_line_arg
                 && x->dereference == DEREF_COMMAND_LINE_ARGUMENTS)
             || x->dereference == DEREF_ALWAYS))
  {
    earlier_file = remember_copied (dst_name, src_sb.st_ino, src_sb.st_dev);
  }

/* Did we copy this inode somewhere else (in this command line argument)
   and therefore this is a second hard link to the inode?  */

if (earlier_file)
  {
    /* Avoid damaging the destination file system by refusing to preserve
       hard-linked directories (which are found at least in Netapp snapshot
       directories).  */
    if (S_ISDIR (src_mode))
      {
        /* If src_name and earlier_file refer to the same directory entry,
           then warn about copying a directory into itself.  */
        if (same_name (src_name, earlier_file))
          {
            error (0, 0, _("cannot copy a directory, %s, into itself, %s"),
                   quoteaf_n (0, top_level_src_name),
                   quoteaf_n (1, top_level_dst_name));
            *copy_into_self = true;
            goto un_backup;
          }
        else if (same_name (dst_name, earlier_file))
```

```
          {
            error (0, 0, _("warning: source directory %s "
                           "specified more than once"),
                   quoteaf (top_level_src_name));
            /* In move mode, if a previous rename succeeded, then
               we won't be in this path as the source is missing.  If the
               rename previously failed, then that has been handled, so
               pretend this attempt succeeded so the source isn't removed.  */
            if (x->move_mode && rename_succeeded)
              *rename_succeeded = true;
            /* We only do backups in move mode, and for non directories.
               So just ignore this repeated entry.  */
            return true;
          }
        else if (x->dereference == DEREF_ALWAYS
                 || (command_line_arg
                     && x->dereference == DEREF_COMMAND_LINE_ARGUMENTS))
          {
            /* This happens when e.g., encountering a directory for the
               second or subsequent time via symlinks when cp is invoked
               with -R and -L.  E.g.,
               rm -rf a b c d; mkdir a b c d; ln -s ../c a; ln -s ../c b;
               cp -RL a b d
            */
          }
        else
          {
            error (0, 0, _("will not create hard link %s to directory %s"),
                   quoteaf_n (0, dst_name), quoteaf_n (1, earlier_file));
            goto un_backup;
          }
      }
    else
      {
        if (! create_hard_link (earlier_file, dst_name, true, x->verbose,
                                dereference))
          goto un_backup;

        return true;
      }
  }

if (x->move_mode)
  {
    if (rename (src_name, dst_name) == 0)
      {
        if (x->verbose)
          {
            printf (_("renamed "));
            emit_verbose (src_name, dst_name, dst_backup);
          }

        if (x->set_security_context)
          {
            /* -Z failures are only warnings currently.  */
            (void) set_file_security_ctx (dst_name, false, true, x);
          }

        if (rename_succeeded)
```

```
      *rename_succeeded = true;

    if (command_line_arg)
      {
        /* Record destination dev/ino/name, so that if we are asked
           to overwrite that file again, we can detect it and fail.  */
        /* It's fine to use the _source_ stat buffer (src_sb) to get the
           _destination_ dev/ino, since the rename above can't have
           changed those, and 'mv' always uses lstat.
           We could limit it further by operating
           only on non-directories.  */
        record_file (x->dest_info, dst_name, &src_sb);
      }

    return true;
  }

/* FIXME: someday, consider what to do when moving a directory into
   itself but when source and destination are on different devices.  */

/* This happens when attempting to rename a directory to a
   subdirectory of itself.  */
if (errno == EINVAL)
  {
    /* FIXME: this is a little fragile in that it relies on rename(2)
       failing with a specific errno value.  Expect problems on
       non-POSIX systems.  */
    error (0, 0, _("cannot move %s to a subdirectory of itself, %s"),
           quoteaf_n (0, top_level_src_name),
           quoteaf_n (1, top_level_dst_name));

    /* Note that there is no need to call forget_created here,
       (compare with the other calls in this file) since the
       destination directory didn't exist before.  */

    *copy_into_self = true;
    /* FIXME-cleanup: Don't return true here; adjust mv.c accordingly.
       The only caller that uses this code (mv.c) ends up setting its
       exit status to nonzero when copy_into_self is nonzero.  */
    return true;
  }

/* WARNING: there probably exist systems for which an inter-device
   rename fails with a value of errno not handled here.
   If/as those are reported, add them to the condition below.
   If this happens to you, please do the following and send the output
   to the bug-reporting address (e.g., in the output of cp --help):
     touch k; perl -e 'rename "k","/tmp/k" or print "$!(",$!+0,")\n"'
   where your current directory is on one partition and /tmp is the other.
   Also, please try to find the E* errno macro name corresponding to
   the diagnostic and parenthesized integer, and include that in your
   e-mail.  One way to do that is to run a command like this
     find /usr/include/. -type f \
       | xargs grep 'define.*\<E[A-Z]*\>.*\<18\>' /dev/null
   where you'd replace '18' with the integer in parentheses that
   was output from the perl one-liner above.
   If necessary, of course, change '/tmp' to some other directory.  */
if (errno != EXDEV)
  {
```

```
        /* There are many ways this can happen due to a race condition.
           When something happens between the initial XSTAT and the
           subsequent rename, we can get many different types of errors.
           For example, if the destination is initially a non-directory
           or non-existent, but it is created as a directory, the rename
           fails.  If two 'mv' commands try to rename the same file at
           about the same time, one will succeed and the other will fail.
           If the permissions on the directory containing the source or
           destination file are made too restrictive, the rename will
           fail.  Etc.  */
        error (0, errno,
               _("cannot move %s to %s"),
               quoteaf_n (0, src_name), quoteaf_n (1, dst_name));
        forget_created (src_sb.st_ino, src_sb.st_dev);
        return false;
      }

    /* The rename attempt has failed.  Remove any existing destination
       file so that a cross-device 'mv' acts as if it were really using
       the rename syscall.  Note both src and dst must both be directories
       or not, and this is enforced above.  Therefore we check the src_mode
       and operate on dst_name here as a tighter constraint and also because
       src_mode is readily available here.  */
    if ((S_ISDIR (src_mode) ? rmdir (dst_name) : unlink (dst_name)) != 0
        && errno != ENOENT)
      {
        error (0, errno,
           _("inter-device move failed: %s to %s; unable to remove target"),
               quoteaf_n (0, src_name), quoteaf_n (1, dst_name));
        forget_created (src_sb.st_ino, src_sb.st_dev);
        return false;
      }

    if (x->verbose && !S_ISDIR (src_mode))
      {
        printf (_("copied "));
        emit_verbose (src_name, dst_name, dst_backup);
      }
    new_dst = true;
  }

/* If the ownership might change, or if it is a directory (whose
   special mode bits may change after the directory is created),
   omit some permissions at first, so unauthorized users cannot nip
   in before the file is ready.  */
dst_mode_bits = (x->set_mode ? x->mode : src_mode) & CHMOD_MODE_BITS;
omitted_permissions =
  (dst_mode_bits
   & (x->preserve_ownership ? S_IRWXG | S_IRWXO
      : S_ISDIR (src_mode) ? S_IWGRP | S_IWOTH
      : 0));

delayed_ok = true;

/* If required, set the default security context for new files.
   Also for existing files this is used as a reference
   when copying the context with --preserve=context.
   FIXME: Do we need to consider dst_mode_bits here?  */
if (! set_process_security_ctx (src_name, dst_name, src_mode, new_dst, x))
```

```
  return false;

if (S_ISDIR (src_mode))
  {
    struct dir_list *dir;

    /* If this directory has been copied before during the
       recursion, there is a symbolic link to an ancestor
       directory of the symbolic link.  It is impossible to
       continue to copy this, unless we've got an infinite disk.  */

    if (is_ancestor (&src_sb, ancestors))
      {
        error (0, 0, _("cannot copy cyclic symbolic link %s"),
               quoteaf (src_name));
        goto un_backup;
      }

    /* Insert the current directory in the list of parents.  */

    dir = alloca (sizeof *dir);
    dir->parent = ancestors;
    dir->ino = src_sb.st_ino;
    dir->dev = src_sb.st_dev;

    if (new_dst || !S_ISDIR (dst_sb.st_mode))
      {
        /* POSIX says mkdir's behavior is implementation-defined when
           (src_mode & ~S_IRWXUGO) != 0.  However, common practice is
           to ask mkdir to copy all the CHMOD_MODE_BITS, letting mkdir
           decide what to do with S_ISUID | S_ISGID | S_ISVTX.  */
        if (mkdir (dst_name, dst_mode_bits & ~omitted_permissions) != 0)
          {
            error (0, errno, _("cannot create directory %s"),
                   quoteaf (dst_name));
            goto un_backup;
          }

        /* We need search and write permissions to the new directory
           for writing the directory's contents. Check if these
           permissions are there.  */

        if (lstat (dst_name, &dst_sb) != 0)
          {
            error (0, errno, _("cannot stat %s"), quoteaf (dst_name));
            goto un_backup;
          }
        else if ((dst_sb.st_mode & S_IRWXU) != S_IRWXU)
          {
            /* Make the new directory searchable and writable.  */

            dst_mode = dst_sb.st_mode;
            restore_dst_mode = true;

            if (lchmod (dst_name, dst_mode | S_IRWXU) != 0)
              {
                error (0, errno, _("setting permissions for %s"),
                       quoteaf (dst_name));
                goto un_backup;
```

```
              }
          }

        /* Record the created directory's inode and device numbers into
           the search structure, so that we can avoid copying it again.
           Do this only for the first directory that is created for each
           source command line argument.  */
        if (!*first_dir_created_per_command_line_arg)
          {
            remember_copied (dst_name, dst_sb.st_ino, dst_sb.st_dev);
            *first_dir_created_per_command_line_arg = true;
          }

        if (x->verbose)
          {
            if (x->move_mode)
              printf (_("created directory %s\n"), quoteaf (dst_name));
            else
              emit_verbose (src_name, dst_name, NULL);
          }
      }
    else
      {
        omitted_permissions = 0;

        /* For directories, the process global context could be reset for
           descendents, so use it to set the context for existing dirs here.
           This will also give earlier indication of failure to set ctx.  */
        if (x->set_security_context || x->preserve_security_context)
          if (! set_file_security_ctx (dst_name, x->preserve_security_context,
                                       false, x))
            {
              if (x->require_preserve_context)
                goto un_backup;
            }
      }

    /* Decide whether to copy the contents of the directory.  */
    if (x->one_file_system && parent && parent->st_dev != src_sb.st_dev)
      {
        /* Here, we are crossing a file system boundary and cp's -x option
           is in effect: so don't copy the contents of this directory. */
      }
    else
      {
        /* Copy the contents of the directory.  Don't just return if
           this fails -- otherwise, the failure to read a single file
           in a source directory would cause the containing destination
           directory not to have owner/perms set properly.  */
        delayed_ok = copy_dir (src_name, dst_name, new_dst, &src_sb, dir, x,
                               first_dir_created_per_command_line_arg,
                               copy_into_self);
      }
  }
else if (x->symbolic_link)
  {
    dest_is_symlink = true;
    if (*src_name != '/')
      {
```

```
        /* Check that DST_NAME denotes a file in the current directory.  */
        struct stat dot_sb;
        struct stat dst_parent_sb;
        char *dst_parent;
        bool in_current_dir;

        dst_parent = dir_name (dst_name);

        in_current_dir = (STREQ (".", dst_parent)
                          /* If either stat call fails, it's ok not to report
                             the failure and say dst_name is in the current
                             directory.  Other things will fail later.  */
                          || stat (".", &dot_sb) != 0
                          || stat (dst_parent, &dst_parent_sb) != 0
                          || SAME_INODE (dot_sb, dst_parent_sb));
        free (dst_parent);

        if (! in_current_dir)
          {
            error (0, 0,
           _("%s: can make relative symbolic links only in current directory"),
                     quotef (dst_name));
            goto un_backup;
          }
      }
    if (force_symlinkat (src_name, AT_FDCWD, dst_name,
                         x->unlink_dest_after_failed_open)
        < 0)
      {
        error (0, errno, _("cannot create symbolic link %s to %s"),
               quoteaf_n (0, dst_name), quoteaf_n (1, src_name));
        goto un_backup;
      }
  }

/* POSIX 2008 states that it is implementation-defined whether
   link() on a symlink creates a hard-link to the symlink, or only
   to the referent (effectively dereferencing the symlink) (POSIX
   2001 required the latter behavior, although many systems provided
   the former).  Yet cp, invoked with '--link --no-dereference',
   should not follow the link.  We can approximate the desired
   behavior by skipping this hard-link creating block and instead
   copying the symlink, via the 'S_ISLNK'- copying code below.

   Note gnulib's linkat module, guarantees that the symlink is not
   dereferenced.  However its emulation currently doesn't maintain
   timestamps or ownership so we only call it when we know the
   emulation will not be needed.  */
else if (x->hard_link
         && !(! CAN_HARDLINK_SYMLINKS && S_ISLNK (src_mode)
              && x->dereference == DEREF_NEVER))
  {
    if (! create_hard_link (src_name, dst_name,
                            x->unlink_dest_after_failed_open,
                            false, dereference))
      goto un_backup;
  }
else if (S_ISREG (src_mode)
         || (x->copy_as_regular && !S_ISLNK (src_mode)))
```

```
  {
    copied_as_regular = true;
    /* POSIX says the permission bits of the source file must be
       used as the 3rd argument in the open call.  Historical
       practice passed all the source mode bits to 'open', but the extra
       bits were ignored, so it should be the same either way.

       This call uses DST_MODE_BITS, not SRC_MODE.  These are
       normally the same, and the exception (where x->set_mode) is
       used only by 'install', which POSIX does not specify and
       where DST_MODE_BITS is what's wanted.  */
    if (! copy_reg (src_name, dst_name, x, dst_mode_bits & S_IRWXUGO,
                    omitted_permissions, &new_dst, &src_sb))
      goto un_backup;
  }
else if (S_ISFIFO (src_mode))
  {
    /* Use mknod, rather than mkfifo, because the former preserves
       the special mode bits of a fifo on Solaris 10, while mkfifo
       does not.  But fall back on mkfifo, because on some BSD systems,
       mknod always fails when asked to create a FIFO.  */
    if (mknod (dst_name, src_mode & ~omitted_permissions, 0) != 0)
      if (mkfifo (dst_name, src_mode & ~S_IFIFO & ~omitted_permissions) != 0)
        {
          error (0, errno, _("cannot create fifo %s"), quoteaf (dst_name));
          goto un_backup;
        }
  }
else if (S_ISBLK (src_mode) || S_ISCHR (src_mode) || S_ISSOCK (src_mode))
  {
    if (mknod (dst_name, src_mode & ~omitted_permissions, src_sb.st_rdev)
        != 0)
      {
        error (0, errno, _("cannot create special file %s"),
               quoteaf (dst_name));
        goto un_backup;
      }
  }
else if (S_ISLNK (src_mode))
  {
    char *src_link_val = areadlink_with_size (src_name, src_sb.st_size);
    dest_is_symlink = true;
    if (src_link_val == NULL)
      {
        error (0, errno, _("cannot read symbolic link %s"),
               quoteaf (src_name));
        goto un_backup;
      }

    int symlink_r = force_symlinkat (src_link_val, AT_FDCWD, dst_name,
                                     x->unlink_dest_after_failed_open);
    int symlink_err = symlink_r < 0 ? errno : 0;
    if (symlink_err && x->update && !new_dst && S_ISLNK (dst_sb.st_mode)
        && dst_sb.st_size == strlen (src_link_val))
      {
        /* See if the destination is already the desired symlink.
           FIXME: This behavior isn't documented, and seems wrong
           in some cases, e.g., if the destination symlink has the
           wrong ownership, permissions, or timestamps.  */
```

```
          char *dest_link_val =
            areadlink_with_size (dst_name, dst_sb.st_size);
          if (dest_link_val)
            {
              if (STREQ (dest_link_val, src_link_val))
                symlink_err = 0;
              free (dest_link_val);
            }
        }
      free (src_link_val);
      if (symlink_err)
        {
          error (0, symlink_err, _("cannot create symbolic link %s"),
                 quoteaf (dst_name));
          goto un_backup;
        }

      if (x->preserve_security_context)
        restore_default_fscreatecon_or_die ();

      if (x->preserve_ownership)
        {
          /* Preserve the owner and group of the just-'copied'
             symbolic link, if possible.  */
          if (HAVE_LCHOWN
              && lchown (dst_name, src_sb.st_uid, src_sb.st_gid) != 0
              && ! chown_failure_ok (x))
            {
              error (0, errno, _("failed to preserve ownership for %s"),
                     dst_name);
              if (x->require_preserve)
                goto un_backup;
            }
          else
            {
              /* Can't preserve ownership of symlinks.
                 FIXME: maybe give a warning or even error for symlinks
                 in directories with the sticky bit set -- there, not
                 preserving owner/group is a potential security problem.  */
            }
        }
    }
  else
    {
      error (0, 0, _("%s has unknown file type"), quoteaf (src_name));
      goto un_backup;
    }

  /* With -Z or --preserve=context, set the context for existing files.
     Note this is done already for copy_reg() for reasons described therein.  */
  if (!new_dst && !x->copy_as_regular && !S_ISDIR (src_mode)
      && (x->set_security_context || x->preserve_security_context))
    {
      if (! set_file_security_ctx (dst_name, x->preserve_security_context,
                                   false, x))
        {
           if (x->require_preserve_context)
             goto un_backup;
        }
```

```
  }

if (command_line_arg && x->dest_info)
  {
    /* Now that the destination file is very likely to exist,
       add its info to the set.  */
    struct stat sb;
    if (lstat (dst_name, &sb) == 0)
      record_file (x->dest_info, dst_name, &sb);
  }

/* If we've just created a hard-link due to cp's --link option,
   we're done.  */
if (x->hard_link && ! S_ISDIR (src_mode)
    && !(! CAN_HARDLINK_SYMLINKS && S_ISLNK (src_mode)
         && x->dereference == DEREF_NEVER))
  return delayed_ok;

if (copied_as_regular)
  return delayed_ok;

/* POSIX says that 'cp -p' must restore the following:
   - permission bits
   - setuid, setgid bits
   - owner and group
   If it fails to restore any of those, we may give a warning but
   the destination must not be removed.
   FIXME: implement the above. */

/* Adjust the times (and if possible, ownership) for the copy.
   chown turns off set[ug]id bits for non-root,
   so do the chmod last.  */

if (x->preserve_timestamps)
  {
    struct timespec timespec[2];
    timespec[0] = get_stat_atime (&src_sb);
    timespec[1] = get_stat_mtime (&src_sb);

    if ((dest_is_symlink
         ? utimens_symlink (dst_name, timespec)
         : utimens (dst_name, timespec))
        != 0)
      {
        error (0, errno, _("preserving times for %s"), quoteaf (dst_name));
        if (x->require_preserve)
          return false;
      }
  }

/* Avoid calling chown if we know it's not necessary.  */
if (!dest_is_symlink && x->preserve_ownership
    && (new_dst || !SAME_OWNER_AND_GROUP (src_sb, dst_sb)))
  {
    switch (set_owner (x, dst_name, -1, &src_sb, new_dst, &dst_sb))
      {
      case -1:
        return false;
```

```
      case 0:
        src_mode &= ~ (S_ISUID | S_ISGID | S_ISVTX);
        break;
      }
  }

/* Set xattrs after ownership as changing owners will clear capabilities.  */
if (x->preserve_xattr && ! copy_attr (src_name, -1, dst_name, -1, x)
    && x->require_preserve_xattr)
  return false;

/* The operations beyond this point may dereference a symlink.  */
if (dest_is_symlink)
  return delayed_ok;

set_author (dst_name, -1, &src_sb);

if (x->preserve_mode || x->move_mode)
  {
    if (copy_acl (src_name, -1, dst_name, -1, src_mode) != 0
        && x->require_preserve)
      return false;
  }
else if (x->set_mode)
  {
    if (set_acl (dst_name, -1, x->mode) != 0)
      return false;
  }
else if (x->explicit_no_preserve_mode)
  {
    if (set_acl (dst_name, -1, 0777 & ~cached_umask ()) != 0)
      return false;
  }
else
  {
    if (omitted_permissions)
      {
        omitted_permissions &= ~ cached_umask ();

        if (omitted_permissions && !restore_dst_mode)
          {
            /* Permissions were deliberately omitted when the file
               was created due to security concerns.  See whether
               they need to be re-added now.  It'd be faster to omit
               the lstat, but deducing the current destination mode
               is tricky in the presence of implementation-defined
               rules for special mode bits.  */
            if (new_dst && lstat (dst_name, &dst_sb) != 0)
              {
                error (0, errno, _("cannot stat %s"), quoteaf (dst_name));
                return false;
              }
            dst_mode = dst_sb.st_mode;
            if (omitted_permissions & ~dst_mode)
              restore_dst_mode = true;
          }
      }

    if (restore_dst_mode)
```

```
        {
          if (lchmod (dst_name, dst_mode | omitted_permissions) != 0)
            {
              error (0, errno, _("preserving permissions for %s"),
                     quoteaf (dst_name));
              if (x->require_preserve)
                return false;
            }
        }
    }

  return delayed_ok;

un_backup:

  if (x->preserve_security_context)
    restore_default_fscreatecon_or_die ();

  /* We have failed to create the destination file.
     If we've just added a dev/ino entry via the remember_copied
     call above (i.e., unless we've just failed to create a hard link),
     remove the entry associating the source dev/ino with the
     destination file name, so we don't try to 'preserve' a link
     to a file we didn't create.  */
  if (earlier_file == NULL)
    forget_created (src_sb.st_ino, src_sb.st_dev);

  if (dst_backup)
    {
      if (rename (dst_backup, dst_name) != 0)
        error (0, errno, _("cannot un-backup %s"), quoteaf (dst_name));
      else
        {
          if (x->verbose)
            printf (_("%s -> %s (unbackup)\n"),
                    quoteaf_n (0, dst_backup), quoteaf_n (1, dst_name));
        }
    }
  return false;
}

static bool _GL_ATTRIBUTE_PURE
valid_options (const struct cp_options *co)
{
  assert (co != NULL);
  assert (VALID_BACKUP_TYPE (co->backup_type));
  assert (VALID_SPARSE_MODE (co->sparse_mode));
  assert (VALID_REFLINK_MODE (co->reflink_mode));
  assert (!(co->hard_link && co->symbolic_link));
  assert (!
          (co->reflink_mode == REFLINK_ALWAYS
           && co->sparse_mode != SPARSE_AUTO));
  return true;
}

/* Copy the file SRC_NAME to the file DST_NAME.  The files may be of
   any type.  NONEXISTENT_DST should be true if the file DST_NAME
   is known not to exist (e.g., because its parent directory was just
   created);  NONEXISTENT_DST should be false if DST_NAME might already
```

```
   exist.  OPTIONS is ... FIXME-describe
   Set *COPY_INTO_SELF if SRC_NAME is a parent of (or the
   same as) DST_NAME; otherwise, set clear it.
   Return true if successful.  */

extern bool
copy (char const *src_name, char const *dst_name,
      bool nonexistent_dst, const struct cp_options *options,
      bool *copy_into_self, bool *rename_succeeded)
{
  assert (valid_options (options));

  /* Record the file names: they're used in case of error, when copying
     a directory into itself.  I don't like to make these tools do *any*
     extra work in the common case when that work is solely to handle
     exceptional cases, but in this case, I don't see a way to derive the
     top level source and destination directory names where they're used.
     An alternative is to use COPY_INTO_SELF and print the diagnostic
     from every caller -- but I don't want to do that.  */
  top_level_src_name = src_name;
  top_level_dst_name = dst_name;

  bool first_dir_created_per_command_line_arg = false;
  return copy_internal (src_name, dst_name, nonexistent_dst, NULL, NULL,
                        options, true,
                        &first_dir_created_per_command_line_arg,
                        copy_into_self, rename_succeeded);
}

/* Set *X to the default options for a value of type struct cp_options.  */

extern void
cp_options_default (struct cp_options *x)
{
  memset (x, 0, sizeof *x);
#ifdef PRIV_FILE_CHOWN
  {
    priv_set_t *pset = priv_allocset ();
    if (!pset)
      xalloc_die ();
    if (getppriv (PRIV_EFFECTIVE, pset) == 0)
      {
        x->chown_privileges = priv_ismember (pset, PRIV_FILE_CHOWN);
        x->owner_privileges = priv_ismember (pset, PRIV_FILE_OWNER);
      }
    priv_freeset (pset);
  }
#else
  x->chown_privileges = x->owner_privileges = (geteuid () == ROOT_UID);
#endif
}

/* Return true if it's OK for chown to fail, where errno is
   the error number that chown failed with and X is the copying
   option set.  */

extern bool
chown_failure_ok (struct cp_options const *x)
{
```

```
  /* If non-root uses -p, it's ok if we can't preserve ownership.
     But root probably wants to know, e.g. if NFS disallows it,
     or if the target system doesn't support file ownership.  */

  return ((errno == EPERM || errno == EINVAL) && !x->chown_privileges);
}

/* Similarly, return true if it's OK for chmod and similar operations
   to fail, where errno is the error number that chmod failed with and
   X is the copying option set.  */

static bool
owner_failure_ok (struct cp_options const *x)
{
  return ((errno == EPERM || errno == EINVAL) && !x->owner_privileges);
}

/* Return the user's umask, caching the result.

   FIXME: If the destination's parent directory has has a default ACL,
   some operating systems (e.g., GNU/Linux's "POSIX" ACLs) use that
   ACL's mask rather than the process umask.  Currently, the callers
   of cached_umask incorrectly assume that this situation cannot occur.  */
extern mode_t
cached_umask (void)
{
  static mode_t mask = (mode_t) -1;
  if (mask == (mode_t) -1)
    {
      mask = umask (0);
      umask (mask);
    }
  return mask;
}
```

---

coreutils/COPYING

```
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
```

price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and

"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source

includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;

keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a

written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or

```
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.
```

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to

sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

```
  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
```

```
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.15 curl

```
curl
-------------------------------------------------------------------
curl/docs/LICENSE-MIXING.md
-------------------------------------------------------------------
License Mixing
==============

libcurl can be built to use a fair amount of various third party libraries,
libraries that are written and provided by other parties that are distributed
using their own licenses. Even libcurl itself contains code that may cause
problems to some. This document attempts to describe what licenses libcurl and
the other libraries use and what possible dilemmas linking and mixing them all
can lead to for end users.

I am not a lawyer and this is not legal advice!

One common dilemma is that [GPL](https://www.gnu.org/licenses/gpl.html)
licensed code is not allowed to be linked with code licensed under the
[Original BSD license](https://spdx.org/licenses/BSD-4-Clause.html) (with the
announcement clause). You may still build your own copies that use them all,
but distributing them as binaries would be to violate the GPL license - unless
you accompany your license with an
[exception](https://www.gnu.org/licenses/gpl-faq.html#GPLIncompatibleLibs). This
particular problem was addressed when the [Modified BSD
license](https://opensource.org/licenses/BSD-3-Clause) was created, which does
not have the announcement clause that collides with GPL.

## libcurl

 Uses an [MIT style license](https://curl.haxx.se/docs/copyright.html) that is
 very liberal.

## OpenSSL

 (May be used for SSL/TLS support) Uses an Original BSD-style license with an
 announcement clause that makes it "incompatible" with GPL. You are not
 allowed to ship binaries that link with OpenSSL that includes GPL code
 (unless that specific GPL code includes an exception for OpenSSL - a habit
 that is growing more and more common). If OpenSSL's licensing is a problem
 for you, consider using another TLS library.

## GnuTLS

 (May be used for SSL/TLS support) Uses the
 [LGPL](https://www.gnu.org/licenses/lgpl.html) license. If this is a problem
 for you, consider using another TLS library. Also note that GnuTLS itself
 depends on and uses other libs (libgcrypt and libgpg-error) and they too are
 LGPL- or GPL-licensed.

## WolfSSL

 (May be used for SSL/TLS support) Uses the GPL license or a proprietary
 license. If this is a problem for you, consider using another TLS library.

## NSS
```

```
 (May be used for SSL/TLS support) Is covered by the
 [MPL](https://www.mozilla.org/MPL/) license, the GPL license and the LGPL
 license. You may choose to license the code under MPL terms, GPL terms, or
 LGPL terms. These licenses grant you different permissions and impose
 different obligations. You should select the license that best meets your
 needs.

## axTLS

 (May be used for SSL/TLS support) Uses a Modified BSD-style license.

## mbedTLS

 (May be used for SSL/TLS support) Uses the [Apache 2.0
 license](https://opensource.org/licenses/Apache-2.0) or the GPL license.
 You may choose to license the code under Apache 2.0 terms or GPL terms.
 These licenses grant you different permissions and impose different
 obligations. You should select the license that best meets your needs.

## BoringSSL

 (May be used for SSL/TLS support) As an OpenSSL fork, it has the same
 license as that.

## libressl

 (May be used for SSL/TLS support) As an OpenSSL fork, it has the same
 license as that.

## c-ares

 (Used for asynchronous name resolves) Uses an MIT license that is very
 liberal and imposes no restrictions on any other library or part you may link
 with.

## zlib

 (Used for compressed Transfer-Encoding support) Uses an MIT-style license
 that shouldn't collide with any other library.

## MIT Kerberos

 (May be used for GSS support) MIT licensed, that shouldn't collide with any
 other parts.

## Heimdal

 (May be used for GSS support) Heimdal is Original BSD licensed with the
 announcement clause.

## GNU GSS

 (May be used for GSS support) GNU GSS is GPL licensed. Note that you may not
 distribute binary curl packages that uses this if you build curl to also link
 and use any Original BSD licensed libraries!

## libidn
```

```
 (Used for IDNA support) Uses the GNU Lesser General Public License [3]. LGPL
 is a variation of GPL with slightly less aggressive "copyleft". This license
 requires more requirements to be met when distributing binaries, see the
 license for details. Also note that if you distribute a binary that includes
 this library, you must also include the full LGPL license text. Please
 properly point out what parts of the distributed package that the license
 addresses.

## OpenLDAP

 (Used for LDAP support) Uses a Modified BSD-style license. Since libcurl uses
 OpenLDAP as a shared library only, I have not heard of anyone that ships
 OpenLDAP linked with libcurl in an app.

## libssh2

 (Used for scp and sftp support) libssh2 uses a Modified BSD-style license.
----------------------------------------------------------------------
curl/COPYING
----------------------------------------------------------------------
COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2018, Daniel Stenberg, <daniel@haxx.se>, and many
contributors, see the THANKS file.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose
with or without fee is hereby granted, provided that the above copyright
notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN
NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE
OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not
be used in advertising or otherwise to promote the sale, use or other dealings
in this Software without prior written authorization of the copyright holder.
```

3.16 dejagnu

```
dejagnu
---------------------------------------------------------------------
dejagnu/COPYING
---------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

```
    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
```

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

```
  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
```

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.17 dhcp

```
dhcp
----------------------------------------------------------------
dhcp/LICENSE
----------------------------------------------------------------
# Copyright (c) 2004-2018 by Internet Systems Consortium, Inc. ("ISC")
# Copyright (c) 1995-2003 by Internet Software Consortium
#
# This Source Code Form is subject to the terms of the Mozilla Public
# License, v. 2.0. If a copy of the MPL was not distributed with this
# file, You can obtain one at http://mozilla.org/MPL/2.0/.
#
# THE SOFTWARE IS PROVIDED "AS IS" AND ISC DISCLAIMS ALL WARRANTIES
# WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
# MERCHANTABILITY AND FITNESS.  IN NO EVENT SHALL ISC BE LIABLE FOR
# ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
# WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
# ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT
# OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.
#
#   Internet Systems Consortium, Inc.
#   950 Charter Street
#   Redwood City, CA 94063
#   <info@isc.org>
#   https://www.isc.org/

See the specific source files for any additional copyright or
license statements.
```

3.18 dialog

```
dialog
------------------------------------------------------------------
dialog/package/debian/copyright
------------------------------------------------------------------
Upstream source http://invisible-island.net/dialog/dialog.html

Current dialog upstream maintainer: Thomas Dickey <dickey@invisible-island.net>

--------------------------------------------------------------------------------
Files: *.c *.h
    Copyright 2000-2014,2015    Thomas E. Dickey

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU Lesser General Public License, version 2.1
    as published by the Free Software Foundation.

    This program is distributed in the hope that it will be useful, but
    WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this program; if not, write to
        Free Software Foundation, Inc.
        51 Franklin St., Fifth Floor
        Boston, MA 02110, USA.

    An earlier version of this program lists as authors
        Savio Lam (lam836@cs.cuhk.hk)
--------------------------------------------------------------------------------

Files: aclocal.m4
Licence: other-BSD
Copyright:  1999-2014,2015 by Thomas E. Dickey
    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
```

```
    sale, use or other dealings in this Software without prior written
    authorization.

Files: install-sh
Copyright:  1994 X Consortium
Licence: other-BSD
    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

    FSF changes to this file are in the public domain.

    Calling this script install-sh is preferred over install.sh, to prevent
    `make' implicit rules from creating a file called install from it
    when there is no Makefile.

    This script is compatible with the BSD install script, but was written
    from scratch.  It can only install one file at a time, a restriction
    shared with many OS's install programs.

Files: debian/*
Copyright:  2010-2012,2013 Thomas E. Dickey
Licence: other-BSD
    Permission to use, copy, modify, and distribute this software and its
    documentation for any purpose and without fee is hereby granted,
    provided that the above copyright notice appear in all copies and that
    both that copyright notice and this permission notice appear in
    supporting documentation, and that the name of the above listed
    copyright holder(s) not be used in advertising or publicity pertaining
    to distribution of the software without specific, written prior
    permission.

    THE ABOVE LISTED COPYRIGHT HOLDER(S) DISCLAIM ALL WARRANTIES WITH REGARD
    TO THIS SOFTWARE, INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY
    AND FITNESS, IN NO EVENT SHALL THE ABOVE LISTED COPYRIGHT HOLDER(S) BE
    LIABLE FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
    WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
    ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
    OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

On Debian systems, the complete text of the GNU General
```

```
Public License can be found in '/usr/share/common-licenses/GPL-2'
----------------------------------------------------------------------
dialog/COPYING
----------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
```

author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

  Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no
charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a
table of data to be supplied by an application program that uses
the facility, other than as an argument passed when the facility
is invoked, then you must make a good faith effort to ensure that,
in the event an application does not supply such function or
table, the facility still operates, and performs whatever part of
its purpose remains meaningful.

(For example, a function in a library to compute square roots has
a purpose that is entirely well-defined independent of the
application. Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany

it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever

changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact

that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

```
  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

3.19 diffutils

```
diffutils
-----------------------------------------------------------------
diffutils/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

```
    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
```

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.20 dos2unix

```
dos2unix
----------------------------------------------------------------
dos2unix/COPYING.txt
----------------------------------------------------------------
The dos2unix package is distributed under FreeBSD style license.
See also http://www.freebsd.org/copyright/freebsd-license.html
--------

Copyright (C) 2009-2016  Erwin Waterlander
Copyright (C) 1998 Christian Wurll
Copyright (C) 1998 Bernd Johannes Wuebben
Copyright (C) 1994-1995 Benjamin Lin.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice in the documentation and/or other materials provided with
   the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

3.21 e2fsprogs

```
e2fsprogs
------------------------------------------------------------------
e2fsprogs/ext2ed/COPYRIGHT
------------------------------------------------------------------
EXT2ED is hereby placed under the terms of the GNU General Public License.
Follows the GNU license.

Gadi Oxman, August 1995

--------------------------------------------------------------------------------

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                          675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
```

software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

```
    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)


These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
```

anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is

implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER

PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19yy name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989
Ty Coon, President of Vice
```

```
This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
-----------------------------------------------------------------
e2fsprogs/lib/uuid/copy.c
-----------------------------------------------------------------
/*
 * copy.c --- copy UUIDs
 *
 * Copyright (C) 1996, 1997 Theodore Ts'o.
 *
 * %Begin-Header%
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, and the entire permission notice in its entirety,
 *    including the disclaimer of warranties.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. The name of the author may not be used to endorse or promote
 *    products derived from this software without specific prior
 *    written permission.
 *
 * THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
 * WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
 * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF
 * WHICH ARE HEREBY DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE
 * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
 * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
 * OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
 * BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
 * LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
 * USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH
 * DAMAGE.
 * %End-Header%
 */

#include "config.h"
#include "uuidP.h"

void uuid_copy(uuid_t dst, const uuid_t src)
{
        unsigned char           *cp1;
        const unsigned char     *cp2;
        int                     i;

        for (i=0, cp1 = dst, cp2 = src; i < 16; i++)
                *cp1++ = *cp2++;
}
-----------------------------------------------------------------
e2fsprogs/lib/uuid/COPYING
-----------------------------------------------------------------
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
```

```
are met:
1. Redistributions of source code must retain the above copyright
   notice, and the entire permission notice in its entirety,
   including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior
   written permission.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF
WHICH ARE HEREBY DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
--------------------------------------------------------------------
e2fsprogs/lib/ext2fs/tdb/patches/copyright
--------------------------------------------------------------------
Index: tdbsa/tdb.c
====================================================================
--- tdbsa.orig/tdb.c
+++ tdbsa/tdb.c
@@ -4,11 +4,11 @@ Rev: 23371
 Last Changed Date: 2007-06-06 20:14:06 -0400 (Wed, 06 Jun 2007)
 */
  /*
-   Unix SMB/CIFS implementation.
+   trivial database library - standalone version

-   trivial database library - private includes
-
-   Copyright (C) Andrew Tridgell              2005
+   Copyright (C) Andrew Tridgell              1999-2005
+   Copyright (C) Jeremy Allison               2000-2006
+   Copyright (C) Paul `Rusty' Russell         2000

     ** NOTE! The following LGPL license applies to the tdb
     ** library. This does NOT imply that all of Samba is released
--------------------------------------------------------------------
e2fsprogs/debian/copyright
--------------------------------------------------------------------
This is the Debian GNU/Linux prepackaged version of the EXT2 file
system utilities (e2fsck, mke2fs, etc.).  The EXT2 utilities were
written by Theodore Ts'o <tytso@mit.edu> and Remy Card <card@masi.ibp.fr>.

Sources were obtained from http://sourceforge.net/projects/e2fsprogs

Packaging is Copyright (c) 2003-2007 Theodore Ts'o <tytso@mit.edu>
             Copyright (c) 1997-2003 Yann Dirson <dirson@debian.org>
             Copyright (c) 2001 Alcove <http://www.alcove.com/>
             Copyright (c) 1997 Klee Dienes
```

```
             Copyright (c) 1995-1996 Michael Nonweiler <mrn20@cam.ac.uk>

Upstream Author: Theodore Ts'o <tytso@mit.edu>

Copyright notice:

This package, the EXT2 filesystem utilities, are made available under
the GNU General Public License version 2, with the exception of the
lib/ext2fs and lib/e2p libraries, which are made available under the
GNU Library General Public License Version 2, the lib/uuid library
which is made available under a BSD-style license and the lib/et and
lib/ss libraries which are made available under an MIT-style license.

        Copyright (c) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000,
        2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 by Theodore Ts'o

On Debian GNU systems, the complete text of the GNU General Public
License can be found in `/usr/share/common-licenses/GPL-2'.  The
complete text of the GNU Library General Public License can be found
in '/usr/share/common-licenses/LGPL-2'.


The license used for lib/et and lib/ss libraries is:

   Copyright 1987 by the Student Information Processing Board
   of the Massachusetts Institute of Technology

   Permission to use, copy, modify, and distribute this software and
   its documentation for any purpose is hereby granted, provided that
   the names of M.I.T. and the M.I.T. S.I.P.B. not be used in
   advertising or publicity pertaining to distribution of the software
   without specific, written prior permission.  M.I.T. and the
   M.I.T. S.I.P.B. make no representations about the suitability of
   this software for any purpose.  It is provided "as is" without
   express or implied warranty.

The license used for lib/uuid is:

   Redistribution and use in source and binary forms, with or without
   modification, are permitted provided that the following conditions
   are met:
   1. Redistributions of source code must retain the above copyright
      notice, and the entire permission notice in its entirety,
      including the disclaimer of warranties.
   2. Redistributions in binary form must reproduce the above copyright
      notice, this list of conditions and the following disclaimer in the
      documentation and/or other materials provided with the distribution.
   3. The name of the author may not be used to endorse or promote
      products derived from this software without specific prior
      written permission.

   THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
   WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
   OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF
   WHICH ARE HEREBY DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE
   LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
   CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
   OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
   BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
```

```
   LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
   (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
   USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH
   DAMAGE.
----------------------------------------------------------------------
e2fsprogs/util/copy_sparse.c
----------------------------------------------------------------------
/*
 * copy_sparse.c -- copy a very large sparse files efficiently
 *      (requires root privileges)
 *
 * Copyright 2003, 2004 by Theodore Ts'o.
 *
 * %Begin-Header%
 * This file may be redistributed under the terms of the GNU Public
 * License.
 * %End-Header%
 */

#ifndef __linux__
#include <stdio.h>
#include <stdlib.h>

int main(void) {
    fputs("This program is only supported on Linux!\n", stderr);
    exit(EXIT_FAILURE);
}
#else
#define _LARGEFILE64_SOURCE

#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <string.h>
#include <time.h>
#include <fcntl.h>
#include <errno.h>
#ifdef HAVE_GETOPT_H
#include <getopt.h>
#else
extern char *optarg;
extern int optind;
#endif
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/vfs.h>
#include <sys/ioctl.h>
#include <linux/fd.h>

int verbose = 0;

#define FIBMAP     _IO(0x00,1)  /* bmap access */
#define FIGETBSZ   _IO(0x00,2)  /* get the block size used for bmap */

static unsigned long get_bmap(int fd, unsigned long block)
{
        int     ret;
        unsigned long b;
```

```
        b = block;
        ret = ioctl(fd, FIBMAP, &b);
        if (ret < 0) {
                if (errno == EPERM) {
                        fprintf(stderr, "No permission to use FIBMAP ioctl; must have root privileges\
                        exit(1);
                }
                perror("FIBMAP");
        }
        return b;
}

static int full_read(int fd, char *buf, size_t count)
{
        int got, total = 0;
        int pass = 0;

        while (count > 0) {
                got = read(fd, buf, count);
                if (got == -1) {
                        if ((errno == EINTR) || (errno == EAGAIN))
                                continue;
                        return total ? total : -1;
                }
                if (got == 0) {
                        if (pass++ >= 3)
                                return total;
                        continue;
                }
                pass = 0;
                buf += got;
                total += got;
                count -= got;
        }
        return total;
}

static void copy_sparse_file(const char *src, const char *dest)
{
        struct stat64   fileinfo;
        long            lb, i, fd, ofd, bs, block, numblocks;
        ssize_t         got, got2;
        off64_t         offset = 0, should_be;
        char            *buf;

        if (verbose)
                printf("Copying sparse file from %s to %s\n", src, dest);

        if (strcmp(src, "-")) {
                if (stat64(src, &fileinfo) < 0) {
                        perror("stat");
                        exit(1);
                }
                if (!S_ISREG(fileinfo.st_mode)) {
                        printf("%s: Not a regular file\n", src);
                        exit(1);
                }
                fd = open(src, O_RDONLY | O_LARGEFILE);
                if (fd < 0) {
```

```
                perror("open");
                exit(1);
        }
        if (ioctl(fd, FIGETBSZ, &bs) < 0) {
                perror("FIGETBSZ");
                close(fd);
                exit(1);
        }
        if (bs < 0) {
                printf("%s: Invalid block size: %ld\n", src, bs);
                exit(1);
        }
        if (verbose)
                printf("Blocksize of file %s is %ld\n", src, bs);
        numblocks = (fileinfo.st_size + (bs-1)) / bs;
        if (verbose)
                printf("File size of %s is %lld (%ld blocks)\n", src,
                       (long long) fileinfo.st_size, numblocks);
} else {
        fd = 0;
        bs = 1024;
}

ofd = open(dest, O_WRONLY|O_CREAT|O_TRUNC|O_LARGEFILE, 0777);
if (ofd < 0) {
        perror(dest);
        exit(1);
}

buf = malloc(bs);
if (!buf) {
        fprintf(stderr, "Couldn't allocate buffer");
        exit(1);
}

for (lb = 0; !fd || lb < numblocks; lb++) {
        if (fd) {
                block = get_bmap(fd, lb);
                if (!block)
                        continue;
                should_be = ((off64_t) lb) * bs;
                if (offset != should_be) {
                        if (verbose)
                                printf("Seeking to %lld\n", should_be);
                        if (lseek64(fd, should_be, SEEK_SET) == (off_t) -1) {
                                perror("lseek src");
                                exit(1);
                        }
                        if (lseek64(ofd, should_be, SEEK_SET) == (off_t) -1) {
                                perror("lseek dest");
                                exit(1);
                        }
                        offset = should_be;
                }
        }
        got = full_read(fd, buf, bs);

        if (fd == 0 && got == 0)
                break;
```

```
                if (got == bs) {
                        for (i=0; i < bs; i++)
                                if (buf[i])
                                        break;
                        if (i == bs) {
                                lseek(ofd, bs, SEEK_CUR);
                                offset += bs;
                                continue;
                        }
                }
                got2 = write(ofd, buf, got);
                if (got != got2) {
                        printf("short write\n");
                        exit(1);
                }
                offset += got;
        }
        offset = fileinfo.st_size;
        if (fstat64(ofd, &fileinfo) < 0) {
                perror("fstat");
                exit(1);
        }
        if (fileinfo.st_size != offset) {
                lseek64(ofd, offset-1, SEEK_CUR);
                buf[0] = 0;
                write(ofd, buf, 1);
        }
        close(fd);
        close(ofd);
}

static void usage(const char *progname)
{
        fprintf(stderr, "Usage: %s [-v] source_file destination_file\n", progname);
        exit(1);
}

int main(int argc, char**argv)
{
        int c;

        while ((c = getopt(argc, argv, "v")) != EOF)
                switch (c) {
                case 'v':
                        verbose++;
                        break;
                default:
                        usage(argv[0]);
                        break;
                }
        if (optind+2 != argc)
                usage(argv[0]);
        copy_sparse_file(argv[optind], argv[optind+1]);

        return 0;
}
#endif
```

3.22 elfutils

```
elfutils
-------------------------------------------------------------------
elfutils/COPYING-GPLV2
-------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
elfutils/COPYING-LGPLV3
----------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
```

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library. The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

```
  The object code form of an Application may incorporate material from
a header file that is part of the Library.  You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
   GNU GPL, and only to the extent that such information is
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
```

the Minimal Corresponding Source and Corresponding Application
Code. If you use option 4d1, you must provide the Installation
Information in the manner specified by section 6 of the GNU GPL
for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based
on the Library, uncombined with any other library facilities,
conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it
is a work based on the Library, and explaining where to find the
accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----
elfutils/COPYING

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for
software and other kinds of works.

The licenses for most software and other practical works are designed

to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable. Therefore, we
have designed this version of the GPL to prohibit the practice for those
products. If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to

produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

  When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or

modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,

in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

```
    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
```

your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

```
  Each contributor grants you a non-exclusive, worldwide, royalty-free
patent license under the contributor's essential patent claims, to
make, use, sell, offer for sale, import and otherwise run, modify and
propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express
agreement or commitment, however denominated, not to enforce a patent
(such as an express permission to practice a patent or covenant not to
sue for patent infringement).  To "grant" such a patent license to a
party means to make such an agreement or commitment not to enforce a
patent against the party.

  If you convey a covered work, knowingly relying on a patent license,
and the Corresponding Source of the work is not available for anyone
to copy, free of charge and under the terms of this License, through a
publicly available network server or other readily accessible means,
then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients.  "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License.  You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot convey a
```

covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS

```
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".
```

```
  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.23 ethtool

```
ethtool
--------------------------------------------------------------------
ethtool/LICENSE
--------------------------------------------------------------------
ethtool is available under the terms of the GNU Public License version 2.

See COPYING for details.
--------------------------------------------------------------------
ethtool/COPYING
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
```

want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such

```
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
```

itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

3.24 eudev

```
eudev
------------------------------------------------------------------
eudev/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

```
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
```

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
```

3.25 expat

```
expat
--------------------------------------------------------------------
expat/COPYING
--------------------------------------------------------------------
Copyright (c) 1998-2000 Thai Open Source Software Center Ltd and Clark Cooper
Copyright (c) 2001-2017 Expat maintainers

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
```

3.26 expect

```
expect
------------------------------------------------------------------
expect/license.terms
------------------------------------------------------------------
Expect

Written by: Don Libes, libes at nist.gov, NIST

Design and implementation of this program was paid for by U.S. tax
dollars.  Therefore it is public domain.  However, the author and NIST
would appreciate credit if this program or parts of it are used.
```

3.27 fcron

```
fcron
---------------------------------------------------------------
fcron/debian/copyright
---------------------------------------------------------------
This package was debianized by Henrique M. Holschuh <hmh@debian.org> on
Sat, 11 Nov 2000 23:10:37 -0200.

It was downloaded from http://fcron.free.fr/

Upstream Author: Thibault GODOUET <fcron@free.fr>

fcron is Copyright (c) 2000 by Thibault Godouet <fcron@free.fr>, and it is
released under the terms of the GNU General Public License:

   This program is free software; you can redistribute it and/or modify it
   under the terms of the GNU General Public License as published by the
   Free Software Foundation; either version 2, or (at your option) any
   later version.

The GPL may be found in /usr/share/common-licenses/GPL on a Debian system.
```

3.28 file

```
file
--------------------------------------------------------------------
file/COPYING
--------------------------------------------------------------------
$File: COPYING,v 1.1 2008/02/05 19:08:11 christos Exp $
Copyright (c) Ian F. Darwin 1986, 1987, 1989, 1990, 1991, 1992, 1994, 1995.
Software written by Ian F. Darwin and others;
maintained 1994- Christos Zoulas.

This software is not subject to any export provision of the United States
Department of Commerce, and may be exported to any country or planet.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice immediately at the beginning of the file, without modification,
   this list of conditions, and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR AND CONTRIBUTORS ``AS IS'' AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR
ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
```

3.29 findutils

```
findutils
-----------------------------------------------------------------
findutils/COPYING
-----------------------------------------------------------------

                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
```

modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a

menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with

the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

  When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

    c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not

```
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this

License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;

the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the

rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is

conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you

to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.30 flex

```
flex
------------------------------------------------------------------
flex/COPYING
------------------------------------------------------------------
Flex carries the copyright used for BSD software, slightly modified
because it originated at the Lawrence Berkeley (not Livermore!) Laboratory,
which operates under a contract with the Department of Energy:

Copyright (c) 2001, 2002, 2003, 2004, 2005, 2006, 2007 The Flex Project.

Copyright (c) 1990, 1997 The Regents of the University of California.
All rights reserved.

This code is derived from software contributed to Berkeley by
Vern Paxson.

The United States Government has rights in this work pursuant
to contract no. DE-AC03-76SF00098 between the United States
Department of Energy and the University of California.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

Neither the name of the University nor the names of its contributors
may be used to endorse or promote products derived from this software
without specific prior written permission.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.

This basically says "do whatever you please with this software except
remove this notice or take advantage of the University's (or the flex
authors') name".

Note that the "flex.skl" scanner skeleton carries no copyright notice.
You are free to do whatever you please with scanners generated using flex;
for them, you are not even bound by the above copyright.
```

3.31 gawk

```
gawk
--------------------------------------------------------------------
gawk/extension/COPYING
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

```
    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
```

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gawk/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
```

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for

the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any

non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as

long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or

specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a

party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have

permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

```
  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
```

```
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
------------------------------------------------------------------
gawk/missing_d/COPYING.LIB
------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright
the library, and (2) offer you this license which gives you legal
permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain
that everyone understands that there is no warranty for this free
library.  If the library is modified by someone else and passed on, we
want its recipients to know that what they have is not the original
version, so that any problems introduced by others will not reflect on
the original authors' reputations.
```

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the

```
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.


  6. As an exception to the Sections above, you may also compile or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library.  (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Accompany the work with a written offer, valid for at
```

least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

d) Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities. This must be distributed under the terms of the
Sections above.

b) Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a

license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Library General Public
License as published by the Free Software Foundation; either
version 2 of the License, or (at your option) any later version.
```

```
    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free
    Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston,
    MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

3.32 gcc

```
gcc
--------------------------------------------------------------------
gcc/gcc/go/gofrontend/LICENSE
--------------------------------------------------------------------
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

   * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
   * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
   * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------
gcc/gcc/COPYING3
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.
```

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this

License. Each licensee is addressed as "you". "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy. Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies. Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but

which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and

appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product

(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

```
    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.
```

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent

(such as an express permission to practice a patent or covenant not to
sue for patent infringement). To "grant" such a patent license to a
party means to make such an agreement or commitment not to enforce a
patent against the party.

  If you convey a covered work, knowingly relying on a patent license,
and the Corresponding Source of the work is not available for anyone
to copy, free of charge and under the terms of this License, through a
publicly available network server or other readily accessible means,
then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients. "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

```
  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
```

may consider it more useful to permit linking proprietary applications with
the library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License. But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----
gcc/gcc/COPYING

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the

```
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.


                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
```

    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as

distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to

be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
gcc/gcc/COPYING3.LIB
```

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

```
   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library.  You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
```

GNU GPL, and only to the extent that such information is
necessary to install and execute a modified version of the
Combined Work produced by recombining or relinking the
Application with a modified version of the Linked Version. (If
you use option 4d0, the Installation Information must accompany
the Minimal Corresponding Source and Corresponding Application
Code. If you use option 4d1, you must provide the Installation
Information in the manner specified by section 6 of the GNU GPL
for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based
on the Library, uncombined with any other library facilities,
conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it
is a work based on the Library, and explaining where to find the
accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----
gcc/gcc/COPYING.LIB

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

```
[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.


  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
```

ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

  Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data

prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the

Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the

Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time.

Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


----------------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy1.C
----------------------------------------------------------------------
// { dg-do compile }

class A {
public:
    A(){}
    A( const A& a ){}
};

class B  : public A
{
public:
  B( int& s) : s_(s){}
  int& s_;
};

int main()
{
  int i;
  B x1( i );
  B x2( x1 );
}
----------------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy3.C
```

```
----------------------------------------------------------------
// { dg-do run { target c++14_down } }
// { dg-options "-fno-elide-constructors" }

int copies;

struct S {
  S () {}
  S (const S&) { ++copies; }
};

S s[1] = { S () };

int main () {
  if (copies != 1)
    return 1;
}
----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy7.C
----------------------------------------------------------------
// CWG 5

struct C { };
C c;
struct A {
  A(const A&);
  A(const C&);
};
const volatile A a = c;    // Okay
----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy4.C
----------------------------------------------------------------
// PR c++/9342
// We were failing to wrap def().user in a TARGET_EXPR, so copying it
// into the reference temp used a bitwise copy.

struct QString
{
    QString( const QString & );
    QString &operator=( const QString & );
};
struct ServerSettings
{
    QString user;
};
extern ServerSettings def();
extern void arg( const QString& a );
void startSession( bool b, QString s )
{
    arg (b ? def().user : s);
}
----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy2.C
----------------------------------------------------------------
// { dg-do compile }

struct S { S (); };

volatile S s[1] = { S () };
```

```
----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy6.C
----------------------------------------------------------------
// PR c++/11878

struct A
{
    virtual ~A();
};

template<typename T> struct B
{
    T t;
};

void foo() { throw B<A>().t; }
----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/init/copy5.C
----------------------------------------------------------------
// { dg-options "-O2" }

struct BOOL {
    int nVal:1, bSet:1;
    BOOL (int i) : nVal(i!=0), bSet(1) {}
};
struct Fill {
    void *d;
    Fill() : d(0) {}
    Fill( const Fill& ) {}
};
struct SvMetaSlot {
    Fill aGroupId;
    BOOL a8;
    SvMetaSlot() :
      a8(1) {}
    SvMetaSlot* MakeClone() const;
};

SvMetaSlot* SvMetaSlot::MakeClone() const { return new SvMetaSlot( *this ); }

extern "C" void abort(void);
int main()
{
  SvMetaSlot s; SvMetaSlot s2(s);
  if (s.a8.bSet != s2.a8.bSet)
    abort ();
  return 0;
}
----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/tree-ssa/copyprop-1.C
----------------------------------------------------------------
/* { dg-do compile } */
/* { dg-options "-O -fdump-tree-dce3" } */

/* Verify that we can eliminate the useless conversions to/from
   const qualified pointer types
     this_2 = o_1;
     D.20003_4 = this_2->data_m;
     this_5 = D.20003_4;
```

```
     D.20005_6 = this_5->value;
   copyprop should propagate o_1 and D.20003_4 to the loads of data_m
   and value.  dce removes all traces of this.  */

struct Data {
  int get() const { return value; }
  int value;
};

struct Object {
  int operator[](int i) const { return data_m->get(); }
  Data *data_m;
};

int foo(Object&o)
{
  return o[0];
}

/* Remaining should be two loads.  */

/* { dg-final { scan-tree-dump-times " = \[^\n\]*;" 2 "dce3" } } */
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/tree-ssa/copyprop.C
-----------------------------------------------------------------
// PR 39548 verify ssa ICE
//
// { dg-do compile { target { lp64 } } }
// { dg-options  "-Wno-error -fno-exceptions -fno-tree-vrp -O2 -fprofile-generate  -finline-limit=500 -std=c++9
}
//

#include <map>
#include <vector>
#include <iostream>
#include <cstdlib>
using namespace std;
template<typename _FIter, typename _Tp> _FIter lower_bound(_FIter, _FIter, _Tp&);
template<class _Key> struct hash { };
template<class _Val> struct _Hashtable_node {
  _Hashtable_node* _M_next;
  _Val _M_val;
};
static const unsigned long __stl_prime_list[] = { 2, 3, 5 };
inline unsigned long prime(unsigned long __n)   {
  const unsigned long* __first = __stl_prime_list;
  const unsigned long* __last = __stl_prime_list + 29;
  const unsigned long* pos = lower_bound(__first, __last, __n);
  return pos == __last ? *(__last - 1) : *pos;
}
template<class _Val, class _Key, class _HashFcn,     class _ExtractKey, class _EqualKey, class _Alloc>
struct hashtable  {
  typedef _Key key_type;
  typedef _Val value_type;
  typedef _HashFcn hasher;
  typedef _EqualKey key_equal;
  typedef size_t size_type;
  typedef value_type& reference;
  typedef _Hashtable_node<_Val> _Node;
```

```
  typedef typename _Alloc::template rebind<value_type>::other allocator_type;
  allocator_type get_allocator() const { }
  typedef typename _Alloc::template rebind<_Node>::other _Node_Alloc;
  typedef typename _Alloc::template rebind<_Node*>::other _Nodeptr_Alloc;
  typedef vector<_Node*, _Nodeptr_Alloc> _Vector_type;
  _Node_Alloc _M_node_allocator;
  void _M_put_node(_Node* __p) {
    _M_node_allocator.deallocate(__p, 1);
  }
  hasher _M_hash;
  key_equal _M_equals;
  _ExtractKey _M_get_key;
  _Vector_type _M_buckets;
  size_type _M_num_elements;
  hashtable(size_type __n, const _HashFcn& __hf,   const _EqualKey& __eql,   const allocator_type& __a
: _M_num_elements(0)  {
    _M_initialize_buckets(__n);
  }
  ~hashtable() { clear(); }
  reference  find_or_insert(const value_type& __obj);
  size_type  count(const key_type& __key) const {
    const size_type __n = _M_bkt_num_key(__key);
    size_type __result = 0;
    for (const _Node* __cur = _M_buckets[__n]; __cur; __cur = __cur->_M_next)
      if (_M_equals(_M_get_key(__cur->_M_val), __key))   ++__result;
  }
  size_type erase(const key_type& __key);
  void clear();
  size_type _M_next_size(size_type __n) const { return prime(__n); }
  void  _M_initialize_buckets(size_type __n)       {
    const size_type __n_buckets = _M_next_size(__n);
    _M_buckets.reserve(__n_buckets);
    _M_buckets.insert(_M_buckets.end(), __n_buckets, (_Node*) 0);
  }
  size_type       _M_bkt_num_key(const key_type& __key) const  {
    return _M_bkt_num_key(__key, _M_buckets.size());
  }
  size_type       _M_bkt_num_key(const key_type& __key, size_t __n) const  {
    return _M_hash(__key) % __n;
  }
  void       _M_delete_node(_Node* __n)  {
    this->get_allocator().destroy(&__n->_M_val);
    _M_put_node(__n);
  }
};
template<class _Val, class _Key, class _HF, class _Ex, class _Eq, class _All>     typename hashtable<_
hashtable<_Val, _Key, _HF, _Ex, _Eq, _All>::     erase(const key_type& __key)     {
  const size_type __n = _M_bkt_num_key(__key);
  _Node* __first = _M_buckets[__n];
  if (__first)     _Node* __cur = __first;
}
template<class _Val, class _Key, class _HF, class _Ex, class _Eq, class _All>     void
hashtable<_Val, _Key, _HF, _Ex, _Eq, _All>::     clear()     {
  for (size_type __i = 0; __i < _M_buckets.size(); ++__i)  {
    _Node* __cur = _M_buckets[__i];
    while (__cur != 0)  { _M_delete_node(__cur); }
  }
}
```

```
template<class _Key, class _Tp, class _HashFn = ::hash<_Key>,     class _EqualKey = equal_to<_Key>, class _Allo
struct hash_map     {
  typedef hashtable<pair<const _Key, _Tp>,_Key, _HashFn,    _Select1st<pair<const _Key, _Tp> >,
_EqualKey, _Alloc> _Ht;
  _Ht _M_ht;
  typedef typename _Ht::key_type key_type;
  typedef typename _Ht::value_type value_type;
  typedef typename _Ht::hasher hasher;
  typedef typename _Ht::key_equal key_equal;
  typedef typename _Ht::size_type size_type;
  typedef typename _Ht::allocator_type allocator_type;
  hash_map()       : _M_ht(100, hasher(), key_equal(), allocator_type()) { }
  _Tp&       operator[](const key_type& __key)   {
    return _M_ht.find_or_insert(value_type(__key, _Tp())).second;
  }
  size_type count(const key_type& __key) const { return _M_ht.count(__key); }
  size_type erase(const key_type& __key) {
    return _M_ht.erase(__key);
  }
};
extern size_t strlen (__const char *__s);
template <class C> struct scoped_ptr {
  explicit scoped_ptr(C* p = __null) : ptr_(p) { delete ptr_; }
  void reset(C* p = __null) {
    if (p != ptr_) { delete ptr_; }
  }
  C& operator*() const {}
  C* operator->() const {}
  bool operator==(C* p) const { return ptr_ == p; }
  bool operator!=(C* p) const { return ptr_ != p; }
  C* ptr_;
};
namespace std {
class strstreambuf  : public basic_streambuf<char, char_traits<char> >      {
};
class strstream  : public basic_iostream<char>    {
 public:        int pcount() const;
  char* str();
  strstreambuf _M_buf;
};
};
const int INFO = 0,  WARNING = 1,  ERROR = 2,  FATAL = 3,  NUM_SEVERITIES = 4;
struct foo_1 {
  foo_1(string* str) : str_(str)  { }
  operator bool() const {
    return (__builtin_expect(str_ != __null, 0));
  }
  string* str_;
};
template<class t1, class t2> string* Makefoo_1(const t1& v1, const t2& v2, const char* names) {
  strstream ss;
  ss << names << " (" << v1 << " vs. " << v2 << ")";
  return new string(ss.str(), ss.pcount());
}
template <class t1, class t2> inline string* Check_GTImpl(const t1& v1, const t2& v2, const char* names) {
  if (v1 > v2) return __null;
  else return Makefoo_1(v1, v2, names);
}
struct blah_54 {
```

```
  blah_54(const char* file, int line, int severity);
  ~blah_54();
  ostream& stream() { };
};
class blah_0  : public blah_54  {
 public:   blah_0(const char* file, int line);
  blah_0(const char* file, int line, const foo_1& result);
};
template <class Value, class Key, class HashFcn,  class ExtractKey, class EqualKey, class Alloc> class
template <class V, class K, class HF, class ExK, class EqK, class A> struct dense_hashtable_iterator {
  typedef V* pointer;
  dense_hashtable_iterator(const dense_hashtable<V,K,HF,ExK,EqK,A> *h, pointer it, pointer it_end, boo
:    ht(h),    pos(it),    end(it_end)     {
    if (advance)        advance_past_empty_and_deleted();
  }
  pointer operator->() const { }
  void advance_past_empty_and_deleted() {
    while ( pos != end && (ht->test_empty(*this) || ht->test_deleted(*this)) )  ++pos;
  }
  const dense_hashtable<V,K,HF,ExK,EqK,A> *ht;
  pointer pos, end;
};
template <class V, class K, class HF, class ExK, class EqK, class A> struct dense_hashtable_const_iter
  typedef dense_hashtable_iterator<V,K,HF,ExK,EqK,A> iterator;
  typedef dense_hashtable_const_iterator<V,K,HF,ExK,EqK,A> const_iterator;
  typedef const V& reference;
  typedef const V* pointer;
  dense_hashtable_const_iterator(const dense_hashtable<V,K,HF,ExK,EqK,A> *h,  pointer it, pointer it_e
:  ht(h),  pos(it),  end(it_end)       {
    if (advance)  advance_past_empty_and_deleted();
  }
  dense_hashtable_const_iterator(const iterator &it)  :  pos(it.pos), end(it.end)  {}
  reference operator*() const  { return *pos; }
  pointer operator->() const {}
  void advance_past_empty_and_deleted() {
    while ( pos != end && (ht->test_empty(*this) || ht->test_deleted(*this))) ++pos;
  }
  const_iterator& operator++() { }
  bool operator!=(const const_iterator& it) const { }
  const dense_hashtable<V,K,HF,ExK,EqK,A> *ht;
  pointer pos, end;
};
template <class Value, class Key, class HashFcn,  class ExtractKey, class EqualKey, class Alloc> class
 public:   typedef Key key_type;
  typedef Value value_type;
  typedef HashFcn hasher;
  typedef EqualKey key_equal;
  typedef size_t size_type;
  typedef dense_hashtable_iterator<Value, Key, HashFcn,   ExtractKey, EqualKey, Alloc>   iterator;
  typedef dense_hashtable_const_iterator<Value, Key, HashFcn,  ExtractKey, EqualKey, Alloc>
const_iterator;
  static const float HT_OCCUPANCY_FLT;
  static const float HT_EMPTY_FLT;
  static const size_t HT_MIN_BUCKETS = 32;
  iterator end() {
    return iterator(this, table + num_buckets, table + num_buckets, true);
  }
  const_iterator end() const {
    return const_iterator(this, table + num_buckets, table+num_buckets,true);
```

```
 }
 void set_value(value_type* dst, const value_type& src) {
   new(dst) value_type(src);
 }
 void destroy_buckets(size_type first, size_type last) {
   for (; first != last; ++first) table[first].~value_type();
 }
private:   void squash_deleted() {
   if ( num_deleted ) {
     dense_hashtable tmp(*this);
     swap(tmp);
   }
}
 public:   void set_deleted_key(const value_type &val) { squash_deleted(); }
 bool test_deleted(size_type bucknum) const {
   return (use_deleted && num_deleted > 0 && equals(get_key(delval), get_key(table[bucknum])));
 }
 bool test_deleted(const const_iterator &it) const {
   return (use_deleted && num_deleted > 0 && equals(get_key(delval), get_key(*it)));
 }
 bool set_deleted(const_iterator &it) {
   set_value(const_cast<value_type*>(&(*it)), delval);
 }
 bool test_empty(size_type bucknum) const {
   return equals(get_key(emptyval), get_key(table[bucknum]));
 }
 bool test_empty(const const_iterator &it) const {
   return equals(get_key(emptyval), get_key(*it));
 }
 void fill_range_with_empty(value_type* table_start, value_type* table_end) {
   uninitialized_fill(table_start, table_end, emptyval);
 }
 void set_empty(size_type buckstart, size_type buckend) {
   destroy_buckets(buckstart, buckend);
   fill_range_with_empty(table + buckstart, table + buckend);
 }
 size_type size() const {
   return num_elements - num_deleted;
 }
 size_type bucket_count() const { }
 static const size_type ILLEGAL_BUCKET = size_type(-1);
 size_type min_size(size_type num_elts, size_type min_buckets_wanted) {
   size_type sz = HT_MIN_BUCKETS;
   while ( sz < min_buckets_wanted || num_elts >= sz * enlarge_resize_percent )  sz *= 2;
 }
 void maybe_shrink() {
   if (shrink_threshold > 0 &&  (num_elements-num_deleted) < shrink_threshold &&  bucket_count() > HT_MIN_BUCK
     size_type sz = bucket_count() / 2;
     sz /= 2;
     dense_hashtable tmp(*this, sz);
     swap(tmp);
   }
 }
 void resize_delta(size_type delta, size_type min_buckets_wanted = 0) {
   if ( consider_shrink )       maybe_shrink();
   const size_type needed_size = min_size(num_elements + delta,  min_buckets_wanted);
   if ( needed_size > bucket_count() ) {
     const size_type resize_to = min_size(num_elements - num_deleted + delta,  min_buckets_wanted);
     dense_hashtable tmp(*this, resize_to);
```

```
      swap(tmp);
    }
  }
  void copy_from(const dense_hashtable &ht, size_type min_buckets_wanted = 0) {
    clear();
    const size_type resize_to = min_size(ht.size(), min_buckets_wanted);
    num_elements++;
  }
  explicit dense_hashtable(size_type n = 0, const HashFcn& hf = HashFcn(),       const EqualKey& eql =
emptyval(),      enlarge_resize_percent(HT_OCCUPANCY_FLT),      shrink_resize_percent(HT_EMPTY_FLT), t
num_elements(0)  {
    reset_thresholds();
   }
   dense_hashtable(const dense_hashtable& ht, size_type min_buckets_wanted = 0) :   num_deleted(0), us
use_empty(ht.use_empty), delval(ht.delval), emptyval(ht.emptyval), enlarge_resize_percent(ht.enlarge_r
shrink_resize_percent(ht.shrink_resize_percent),    table(__null),         num_buckets(0),
num_elements(0)  {
     reset_thresholds();
     copy_from(ht, min_buckets_wanted);
     set_value(&emptyval, ht.emptyval);
     enlarge_resize_percent = ht.enlarge_resize_percent;
     copy_from(ht);
   }
  ~dense_hashtable() {
    if (table) {
      destroy_buckets(0, num_buckets);
      free(table);
    }
  }
  void swap(dense_hashtable& ht) {
    std::swap(equals, ht.equals);
    {
      value_type tmp;
      set_value(&delval, ht.delval);
      set_value(&ht.delval, tmp);
      set_value(&ht.emptyval, tmp);
    }
    std::swap(table, ht.table);
    std::swap(num_buckets, ht.num_buckets);
    reset_thresholds();
    ht.reset_thresholds();
  }
  void clear() {
    if (table)  destroy_buckets(0, num_buckets);
    num_buckets = min_size(0,0);
    set_empty(0, num_buckets);
  }
  pair<size_type, size_type> find_position(const key_type &key) const {
    const size_type bucket_count_minus_one = bucket_count() - 1;
    size_type bucknum = hash(key) & bucket_count_minus_one;
    size_type insert_pos = ILLEGAL_BUCKET;
    while ( 1 ) {
      if ( test_empty(bucknum) ) {
        if ( insert_pos == ILLEGAL_BUCKET )  return pair<size_type,size_type>(ILLEGAL_BUCKET, insert_p
      }
      else if ( test_deleted(bucknum) ) {
        if ( insert_pos == ILLEGAL_BUCKET )            insert_pos = bucknum;
      }
      else if ( equals(key, get_key(table[bucknum])) ) {
```

```
        return pair<size_type,size_type>(bucknum, ILLEGAL_BUCKET);
      }
    }
  }
  iterator find(const key_type& key) {
    if ( size() == 0 ) return end();
    pair<size_type, size_type> pos = find_position(key);
    if ( pos.first == ILLEGAL_BUCKET )              return end();
    return iterator(this, table + pos.first, table + num_buckets, false);
  }
  const_iterator find(const key_type& key) const {
    if ( size() == 0 )         return end();
    pair<size_type, size_type> pos = find_position(key);
    if ( pos.first == ILLEGAL_BUCKET )                return end();
    return const_iterator(this, table + pos.first, table+num_buckets, false);
  }
  size_type count(const key_type &key) const {
    pair<size_type, size_type> pos = find_position(key); }
  pair<iterator, bool> insert_noresize(const value_type& obj) {
    const pair<size_type,size_type> pos = find_position(get_key(obj));
    if ( pos.first != ILLEGAL_BUCKET) {
      return pair<iterator,bool>(iterator(this, table + pos.first, table + num_buckets, false), false);
    }
    else {
      if ( test_deleted(pos.second) ) { ++num_elements; }
      return pair<iterator,bool>(iterator(this, table + pos.second, table + num_buckets, false), true);
    }
  }
  pair<iterator, bool> insert(const value_type& obj) {
    resize_delta(1);
    return insert_noresize(obj);
  }
  size_type erase(const key_type& key) {
    const_iterator pos = find(key);
    if ( pos != end() ) {
      set_deleted(pos);
    }
  }
  hasher hash;
  key_equal equals;
  ExtractKey get_key;
  size_type num_deleted;
  bool use_deleted;
  bool use_empty;
  value_type delval;
  value_type emptyval;
  float enlarge_resize_percent;
  float shrink_resize_percent;
  size_type shrink_threshold;
  size_type enlarge_threshold;
  value_type *table;
  size_type num_buckets;
  size_type num_elements;
  bool consider_shrink;
  void reset_thresholds() {
    enlarge_threshold = static_cast<size_type>(num_buckets  * shrink_resize_percent);
  }
};
template<> struct hash<long> {
```

```
  size_t operator()(long x) const {
  }
};
template<> struct hash<unsigned long> {
  size_t operator()(unsigned long x) const {
  }
};
template <class Key, class T, class HashFcn = hash<Key>,  class EqualKey = equal_to<Key>, class Alloc
  struct SelectKey {
    const Key& operator()(const pair<const Key, T>& p) const {
      return p.first;
    }
  };
  typedef dense_hashtable<pair<const Key, T>, Key, HashFcn, SelectKey, EqualKey, Alloc> ht;
  ht rep;
 public:    typedef typename ht::key_type key_type;
  typedef T data_type;
  typedef typename ht::value_type value_type;
  typedef typename ht::size_type size_type;
  typedef typename ht::iterator iterator;
  typedef typename ht::const_iterator const_iterator;
  iterator end() {
    return rep.end();
  }
  iterator find(const key_type& key) { return rep.find(key); }
  data_type& operator[](const key_type& key) {
    iterator it = find(key);
    return insert(value_type(key, data_type())).first->second;
  }
  pair<iterator, bool> insert(const value_type& obj) {
    return rep.insert(obj);
  }
  void set_deleted_key(const key_type& key) {
    rep.set_deleted_key(value_type(key, data_type()));
  }
  size_type erase(const key_type& key) { return rep.erase(key); }
};
template <class Value, class HashFcn = hash<Value>, class EqualKey = equal_to<Value>, class Alloc = al
  struct Identity {
    const Value& operator()(const Value& v) const { return v; }
  };
  typedef dense_hashtable<Value, Value, HashFcn, Identity, EqualKey, Alloc> ht;
  ht rep;
 public:    typedef typename ht::key_type key_type;
  typedef typename ht::value_type value_type;
  typedef typename ht::size_type size_type;
  typedef typename ht::const_iterator iterator;
  size_type count(const key_type& key) const {
    return rep.count(key);
  }
  pair<iterator, bool> insert(const value_type& obj) {
    pair<typename ht::iterator, bool> p = rep.insert(obj);
  }
  size_type erase(const key_type& key) {
    return rep.erase(key);
  }
};
class linked_ptr_internal {
 public:   bool depart() { if (next_ == this) return true; }
```

```
  mutable linked_ptr_internal const* next_;
};
template <typename T> class linked_ptr {
 public:     explicit linked_ptr(T* ptr = __null) {
 }
  ~linked_ptr() { depart(); }
  T& operator*() const { }
  T* value_;
  linked_ptr_internal link_;
  void depart() {
    if (link_.depart()) delete value_;
  }
};
class blah_3 {
  const char* ptr_;
  int length_;
 public:   blah_3(const char* str) : ptr_(str), length_((str == __null) ? 0 : static_cast<int>(strlen(str))) {
};
class blah_5;
class Bitmap {
 public:   Bitmap(unsigned int size) : array_size_(RequiredArraySize(size)) { }
  static unsigned int RequiredArraySize(unsigned int num_bits) { return (num_bits + 31) >> 5; }
   unsigned int array_size_;
};
enum blah_31 { CREATIVE_FORMAT_TEXT_NARROW,  kNumblah_31s  };
enum blah_33 { BLACKLISTED  };
template <typename EnumT> class blah_55;
typedef blah_55<blah_31> blah_31Set;
enum blah_36 { APPROVAL_STATUS_APPROVED, APPROVAL_STATUS_UNKNOWN };
enum blah_37 { hahah_INVALID, hahah_KEYWORD };
template<typename EnumT> class blah_55 {
 public:    blah_55(int enum_size);
  bool Insert(EnumT x);
  const int enum_size_;
  Bitmap elements_;
};
template<typename EnumT> blah_55<EnumT>::blah_55(int enum_size) :enum_size_(enum_size), elements_(enum_size)
{
  while (foo_1 _result = Check_GTImpl(1, 0, "enum_size" " " ">" " " "0")) blah_0(".h", 1902, _result).stream();
};
enum blah_38 {
  ttttttt_9,    };
class blah_46 {
 public:   blah_46()       :     hahaha_id_(0),             type_(hahah_INVALID),
approval_status_(APPROVAL_STATUS_APPROVED)     {
 }
  blah_46(long cid)       :     hahaha_id_(cid),             type_(hahah_INVALID),
approval_status_(APPROVAL_STATUS_APPROVED)    {
  }
  long id() const {
    return (static_cast<long>(hahaha_id_) << 16) >> 16;
  }
  static const blah_46 kBlacklistedID;
  bool operator == (const blah_46& x) const { return id() == x.id(); }
  bool operator < (const blah_46& x) const { return id() < x.id(); }
  long hahaha_id_ : 48;
  blah_37 type_ : 8;
  blah_36 approval_status_ : 4;
};
```

```
template <> struct hash<blah_46> {
  size_t operator()(const blah_46 &x) const {
    return size_t(x.id());
  }
};
class blah_57 {
 public:   blah_57();
  void AddReason(blah_33 reason, const blah_3& debug_str, const blah_46& hahaha_id, bool );
  void set_collects_multiple_reasons(bool t) { }
 private:   struct foo_3 {
   string reject_desc;
 };
  foo_3 first_reason_;
};
template <class T> struct foo_5   : public unary_function<T*, long> {
  long operator()(const T* p) const {
    long id = reinterpret_cast<long>(p);
    if (id < 2)  return -id;
  }
};
template <class T> class DensePtrSet : public dense_hashtable<T*, long,   hash<long>, foo_5<T>, equal_
 public:    DensePtrSet() {
   this->set_deleted_key(reinterpret_cast<T*>(1));
 }
  const T* Find(long key) const {
    typename DensePtrSet<T>::const_iterator it = this->find(key);
    return it != this->end() ? *it : __null;
  }
};
struct foo_7 {
  foo_7(bool spell_correction, bool query_broadening, bool previous_query, bool near_aaaaa, bool same_
:     shengmo_0(spell_correction),    shengmo_1(query_broadening),    shengmo_2(previous_query),
shengmo_3(near_aaaaa),    shengmo_4(same_length),    multiplier(mult),    expansion_score(exp_score)
{
  }
  int CompareSameKeywordMatch(const foo_7& compare) const;
  bool shengmo_0, shengmo_1, shengmo_2, shengmo_3, shengmo_4;
  float multiplier, expansion_score;
};
enum blah_41 {
  ACP_ECPM_EARLY = 2 };
struct foo_8  { unsigned int packed_ctr1; };
struct foo_9  { foo_9() {}};
class blah_16;
class blah_17;
class foo_12 { public:   foo_12() {}
  unsigned long hahaha_id() const {}
  unsigned int qbb_score() const {}
 private:   static const vector<blah_46> hmmmmh_4;
  long hahaha_id_ : 40;
};
class foo_13 {
 public:    typedef dense_hash_map<long, int> BestMap;
  foo_13() { best_rrrrrrr_.set_deleted_key(-1); }
  void erase(long ad_group_id)  {
    best_rrrrrrr_.erase(ad_group_id);
  }
  typedef BestMap::iterator iterator;
  typedef BestMap::const_iterator const_iterator;
```

```
  const_iterator begin() const  { }
  iterator end() { return best_rrrrrrr_.end(); }
  iterator find(long ad_group_id) { return best_rrrrrrr_.find(ad_group_id); }
   const foo_12& GetMatch(const_iterator it) const {}
  void hmmmmh_27(long ad_group_id, const foo_12& addme);
 private:   BestMap best_rrrrrrr_;
  vector<foo_12> rrrrrrr_buffer_;
};
struct foo_10  : public dense_hash_set<blah_46> {};
class foo_9Set : public DensePtrSet<foo_9> {};
typedef map<blah_46, foo_7*> foo_6Data;
typedef hash_map<long, linked_ptr<blah_57> > RejectedAdGroupMap;
enum blah_43 {};
class foo_14 {
 public:   foo_14(const unsigned int, const blah_16*, const int*);
  bool GathersMultipleRejectionReasons() const;
  void hmmmmh_30(blah_46 hahaha_id, blah_38 type);
  const foo_7* Insertfoo_6(const blah_46 hahaha_id, bool shengmo_0, bool shengmo_1, bool shengmo_2, bool shengm
  void hmmmmh_7(blah_46 hahaha_id, blah_38 type);
  foo_9* Insertfoo_9();
  bool hmmmmh_8(long ad_group_id, const foo_12 &entry);
  void hmmmmh_9(long ad_group_id);
  foo_13::iterator hmmmmh_0(long ad_group_id);
  bool hmmmmh_8(long ad_group_id, foo_13::iterator best, const foo_12& entry);
  void hmmmmh_5(const blah_46 hahaha_id);
  void hmmmmh_29(const blah_46 hahaha_id);
  bool hmmmmh_12(const blah_46 hahaha_id) const;
  bool hmmmmh_13(const blah_46 hahaha_id) const;
  const foo_9* Getfoo_9(const blah_46 hahaha_id) const;
  bool Gathersfoo_9() const {}
  const foo_10* rrrrrrr_type_data() const {}
  const foo_10* negative_rrrrrrr_type_data() const {}
  const foo_10* positive_rrrrrrr_type_data() const {}
  const foo_9Set* kw_info_set() const { }
   const foo_6Data* rewrite_data() const {}
  const vector<blah_17>& query_rectangles() const {}
   void hmmmmh_14();
   void AddQueryRectangle(const blah_17& query_rectangle);
   void hmmmmh_15(long ad_group_id, const blah_46 hahaha_id,  blah_33 reject_class, const char* reject_desc = _
   void hmmmmh_16(const vector<long>& rejected_sssr_ids);
   void Copy(const foo_14& cmi);
   void hmmmmh_10();
 private:   const blah_16* ad_request_;
  const int* cr_query_;
  blah_43 gather_flags_;
  vector<blah_17> query_rectangles_;
  foo_10 rrrrrrr_type_data_;
  foo_9Set kw_info_set_;
  foo_6Data rewrite_data_;
  scoped_ptr<RejectedAdGroupMap> rejected_sssr_map_;
  foo_13 ad_group_rrrrrrr_data_;
  vector<blah_46> geo_hahaha_;
  bool geo_hahaha_is_sorted_;
  foo_10 negative_rrrrrrr_type_data_, positive_rrrrrrr_type_data_;
  scoped_ptr<foo_10> extra_hahaha_set_;
  int dimension_id_;
  blah_31Set creative_formats_;
  scoped_ptr<dense_hash_set<unsigned long> > near_aaaaa_rrrrrrr_fps_;
  blah_41 comparison_policy_;
```

```
  blah_46 next_virtual_hahaha_id_;
  vector<void*>* sub_queries_;
  bool allow_only_whitelisted_customers_, automatic_hahaha_rrrrrrr_;
  scoped_ptr<blah_5> kw_arena_, expanded_rrrrrrr_arena_;
};
class blah_19 {
  void hmmmmh_3();
  enum blah_45 {};
};
void blah_19::hmmmmh_3() {}
class blah_16 {
 public:   int near_aaaaa_rrrrrrr_fps_size() const {}
  unsigned long near_aaaaa_rrrrrrr_fps(int i) const {}
};
class blah_21 {
 protected:   blah_21(char* first_block, const size_t block_size, bool align_to_page);
  void* GetMemoryFallback(const size_t size, const int align);
  void* GetMemory(const size_t size, const int align) {
    if ( size > 0 && size < remaining_ && align == 1 ) {
      last_alloc_ = freestart_;
    }
    return GetMemoryFallback(size, align);
  }
  char* freestart_;
  char* last_alloc_;
  size_t remaining_;
};
class blah_5 : blah_21 {
 public:   char* Alloc(const size_t size) {
   return reinterpret_cast<char*>(GetMemory(size, 1));
 }
};
class blah_25 {
 public:   virtual ~blah_25();
};
class blah_17 : blah_25 { };
void Fillfoo_8(const foo_12& x2, struct foo_8* out) {
  out->packed_ctr1 = x2.qbb_score();
}
const vector<blah_46> foo_12::hmmmmh_4;
foo_14::foo_14(const unsigned int gather_flags,   const blah_16* ad_request, const int* cr_query):
ad_request_(ad_request),     cr_query_(cr_query),        gather_flags_(static_cast<blah_43>(gather_fla
geo_hahaha_is_sorted_(false),         dimension_id_(0),       creative_formats_(kNumblah_31s),
comparison_policy_(ACP_ECPM_EARLY),      sub_queries_(new vector<void*>()),         allow_only_whiteli
automatic_hahaha_rrrrrrr_(false) {
  hmmmmh_10();
}
void foo_14::hmmmmh_5(const blah_46 hahaha_id) {
  negative_rrrrrrr_type_data_.insert(hahaha_id);
}
void foo_14::hmmmmh_7(blah_46 hahaha_id, blah_38 type) { }
foo_13::iterator foo_14::hmmmmh_0(     long ad_group_id) {
  return ad_group_rrrrrrr_data_.find(ad_group_id);
}
bool foo_14::hmmmmh_8(long ad_group_id, foo_13::iterator best, const foo_12& entry) {
  rejected_sssr_map_->erase(ad_group_id);
  ad_group_rrrrrrr_data_.hmmmmh_27(ad_group_id, entry);
}
bool foo_14::hmmmmh_8(long ad_group_id, const foo_12& entry) {
```

```
  foo_13::iterator best = hmmmmh_0(ad_group_id);
}
void foo_14::hmmmmh_9(long ad_group_id) {
  ad_group_rrrrrrr_data_.erase(ad_group_id);
}
void foo_14::hmmmmh_10() {
  if (near_aaaaa_rrrrrrr_fps_ != __null) {
    blah_54(".cc", 226, WARNING).stream() << "";
    for (int j = 0;
         j < ad_request_->near_aaaaa_rrrrrrr_fps_size(); j++) {
      near_aaaaa_rrrrrrr_fps_->insert(ad_request_->near_aaaaa_rrrrrrr_fps(j));
    }
  }
}
const foo_7* foo_14::Insertfoo_6(const blah_46 hahaha_id, bool shengmo_0, bool shengmo_1, bool shengmo_2,
bool shengmo_3, bool shengmo_4_rewrite, float multiplier, float context_score) {
  if (rrrrrrr_type_data_.count(hahaha_id) > 0)   return __null;
  foo_7* new_info =  new(expanded_rrrrrrr_arena_->Alloc(sizeof(foo_7))) foo_7(shengmo_0,shengmo_1, shengmo_2, s
  pair<foo_6Data::iterator, bool> status = rewrite_data_.insert( make_pair(hahaha_id, new_info));
  foo_7* inserted = status.first->second;
  if (!status.second) {
    if (inserted->CompareSameKeywordMatch(*new_info) < 0)   *inserted = *new_info;
  }
}
foo_9* foo_14::Insertfoo_9() {
  foo_9* info = new(kw_arena_->Alloc(sizeof(foo_9))) foo_9;
  if (Gathersfoo_9())     kw_info_set_.insert(info);
  creative_formats_.Insert(CREATIVE_FORMAT_TEXT_NARROW);
}
bool foo_14::hmmmmh_12(const blah_46 hahaha_id) const {
  if (rrrrrrr_type_data_.count(hahaha_id)) return true;
}
bool foo_14::hmmmmh_13(const blah_46 hahaha_id) const {
  if (positive_rrrrrrr_type_data_.count(hahaha_id)) return true;
}
const foo_9* foo_14::Getfoo_9(const blah_46 hahaha_id) const {
  if (Gathersfoo_9())     return kw_info_set_.Find(hahaha_id.id());
  static int occurrences_383 = 0, occurrences_mod_n_383 = 0;
  if (++occurrences_mod_n_383 > 1000)      occurrences_mod_n_383 -= 1000;
}
void foo_14::hmmmmh_15(long ad_group_id, const blah_46 hahaha_id,  blah_33 reject_class,
const char* reject_desc) {
  if (rejected_sssr_map_ == __null) {
    blah_54("a.cc", 413, ERROR).stream() << "re NULL";
    rejected_sssr_map_.reset(new RejectedAdGroupMap);
  }
  if (rejected_sssr_map_->count(ad_group_id) == 0) {
    blah_57* ad_rejection = new blah_57();
    ad_rejection->set_collects_multiple_reasons( GathersMultipleRejectionReasons());
    (*rejected_sssr_map_)[ad_group_id] = linked_ptr<blah_57>(ad_rejection);
  }
  blah_57& ad_rejection = *(*rejected_sssr_map_)[ad_group_id];
  ad_rejection.AddReason(reject_class, reject_desc, hahaha_id, false);
}
void foo_14::hmmmmh_16(const vector<long>& rejected_sssr_ids) {
  for (vector<long>::const_iterator it = rejected_sssr_ids.begin();
       it != rejected_sssr_ids.end(); ++it) {
    ad_group_rrrrrrr_data_.erase(*it);
    for (foo_13::const_iterator it = ad_group_rrrrrrr_data_.begin();
```

```
         it != ad_group_rrrrrrr_data_.end(); ++it) {
      hmmmmh_15(it->first,  ad_group_rrrrrrr_data_.GetMatch(it).hahaha_id(), BLACKLISTED);
    }
  }
  hmmmmh_30(blah_46::kBlacklistedID, ttttttt_9);
}
void foo_14::Copy(const foo_14& cmi) {
  rrrrrrr_type_data_ = *cmi.rrrrrrr_type_data();
  negative_rrrrrrr_type_data_ = *cmi.negative_rrrrrrr_type_data();
  positive_rrrrrrr_type_data_ = *cmi.positive_rrrrrrr_type_data();
  if (cmi.Gathersfoo_9()) {
    kw_info_set_ = *cmi.kw_info_set();
    rewrite_data_ = *cmi.rewrite_data();
  }
  hmmmmh_14();
  for (int i = 0; i < cmi.query_rectangles().size();
       ++i)  AddQueryRectangle(cmi.query_rectangles()[i]);
}
void foo_13::hmmmmh_27(long ad_group_id, const foo_12& addme) {
  int& best_index = best_rrrrrrr_[ad_group_id];
  rrrrrrr_buffer_.push_back(addme);
}
void foo_14::hmmmmh_29(const blah_46 hahaha_id) {
  if (extra_hahaha_set_ != __null) extra_hahaha_set_->erase(hahaha_id);
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/expr/copy1.C
-----------------------------------------------------------------
// PR c++/14035
// { dg-do run }

extern "C" void abort();

struct Blob {
  int x, y;
  Blob() { }
  Blob(const Blob &b) { abort (); }
};
struct Blobby : public Blob { };

struct Wooly {
  operator const Blobby & ()
  {
    return myBlobby;
  }
  Blobby myBlobby;
};

void catcher(const Blob &blo)
{ }

int main()
{
  Wooly wooly;
  catcher((const Blob &)wooly);
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/template/copy1.C
-----------------------------------------------------------------
```

```
// { dg-do compile }

// Origin: hkluender@otg.com

// PR 5189

struct A
{
  A(A&);                        // { dg-message "A::A" "" { target c++14_down } }
  template <class T> A(T);      // { dg-message "A::A" "" { target c++14_down } }
};

A a = 0; // { dg-error "" "" { target c++14_down } }

-----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/gomp/copyin-1.C
-----------------------------------------------------------------
// { dg-do compile }
// { dg-require-effective-target tls }

int i, j;

#pragma omp threadprivate (i)

void bar(void);
void foo(void)
{
  int k;
  extern int l;
  extern int m;

#pragma omp threadprivate (m)

  #pragma omp parallel copyin(i)
    bar();
  #pragma omp parallel copyin(j)        // { dg-error "threadprivate" }
    bar();
  #pragma omp parallel copyin(k)        // { dg-error "threadprivate" }
    bar();
  #pragma omp parallel copyin(l)        // { dg-error "threadprivate" }
    bar();
  #pragma omp parallel copyin(m)
    bar();
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/overload/copy1.C
-----------------------------------------------------------------
// PR c++/34824

struct A;

struct B
{
  B (A const &);
  B (B &);                      // { dg-message "note" }
};

struct A
{
```

```
  A (B);                        // { dg-message "initializing" }
};

B
f (B const& b)
{
  return b;                     // { dg-error "" }
}
-------------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/opt/copysign-1.C
-------------------------------------------------------------------
// { dg-options "-O2" }
// { dg-do compile }
// PR rtl-opt/27883
// MIPS used to ICE because local flow update
// was not removing an invalid REG_DEAD.


double copysign (double x, double y);
double GetDouble();
double a = copysign (1.0, GetDouble());
-------------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/other/copy1.C
-------------------------------------------------------------------
// { dg-do run }

// Copyright (C) 2000 Free Software Foundation, Inc.
// Contributed by Nathan Sidwell 30 Nov 2001 <nathan@nathan@codesourcery.com>

// PR 87

int assign = 0;
int ctor = 0;
int assignC = 0;

struct A {
  int i;

  template<class T>
  void operator=(const T&) const
  {
    assign = 1;
  }

  A () : i (0) {}

  template <typename T> A (const T &)
  {
    ctor = 1;
  }
};

struct B : A
{
};

struct C
{
  int i;
```

```
  C (int i_) :i (i_) {}

  template <int I>
  void operator= (const C &)
  {
    assignC = 1;
  }
};


int main()
{
  const A a;
  A b;
  B c;

  b = a;
  if (assign)
    return 5;

  b.i = 100;
  c.i = 200;

  a = b;

  if (!assign)
    return 1;
  if (a.i)
    return 2;

  A e (b);
  if (ctor)
    return 3;

  A d (c);
  if (!ctor)
    return 4;

  C c0 (0);
  C c1 (1);

  c0 = c1;
  if (assignC)
    return 5;

  return 0;
}
--------------------------------------------------------------------
gcc/gcc/testsuite/g++.dg/other/copy2.C
--------------------------------------------------------------------
// { dg-do run }

// Test that A's copy assignment method is called when B's instance
// member array of A is assigned.

// Contributed by Brian Gaeke, public domain.
int status = 1;
```

```
class A
{
public:
  int i;
  A &operator =(const A &i)
  {
    status = 0;
  }
};

class B
{
public:
  A arr[10];
};

int main (int argc, char **argv)
{
  B b;
  b.arr[0].i = 15;
  B a;
  a = b; // trigger copy assignment
  return status;
}
```

```
---------------------------------------------------------------------
gcc/gcc/testsuite/lib/copy-file.exp
---------------------------------------------------------------------
#   Copyright (C) 2003-2017 Free Software Foundation, Inc.

# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 3 of the License, or
# (at your option) any later version.
#
# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
# GNU General Public License for more details.
#
# You should have received a copy of the GNU General Public License
# along with GCC; see the file COPYING3.  If not see
# <http://www.gnu.org/licenses/>.

# This file defines a proc for copying regular files as well as
# symlinks.

proc gcc_copy_files {srcfiles dstdir} {
    foreach f $srcfiles {
        if { [is_remote host] } {
            remote_download host $f $dstdir
        } elseif { [catch { set symlink [file readlink $f] } x] } then {
            file copy -force $f $dstdir
        } else {
            if { [regexp "^/" "$symlink"] } then {
                file copy -force $symlink $dstdir
            } else {
                set dirname [file dirname $f]
                file copy -force $dirname/$symlink $dstdir
            }
```

```
        }
    }
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.other/copy1.C
-----------------------------------------------------------------
// { dg-do run  }
// Bug: expand_vec_init doesn't copy arrays of builtin types.

struct B {
  B() { }
  B(const B&) { }
};

struct A
{
  B b;
  int ar[5];
};

int main()
{
  A a;
  for (int i = 0; i < 5; ++i)
    a.ar[i] = i;

  A a2 = a;

  for (int i = 0; i < 5; ++i)
    if (a2.ar[i] != a.ar[i])
      return 1;
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.other/copy3.C
-----------------------------------------------------------------
// { dg-do link  }
// Origin: ericp@mit.edu

class bar {
};

class foo {
  foo (const foo &f);

public:

  foo (bar x) {}
  foo () {}

  void test (const foo &f) {}
};

int main (void) {
  foo f;
  bar b;

  f.test (b);
}
-----------------------------------------------------------------
```

```
gcc/gcc/testsuite/g++.old-deja/g++.other/copy2.C
------------------------------------------------------------------
// { dg-do run  }
// Origin: Mark Mitchell <mark@codesourcery.com>

int i;

struct B {
  B () {}
  B (B&) { i = 1; }
  B (const B&) { i = 2; }
};

struct D : public B {
  D () {}
};

int main ()
{
  D d;
  D d2 (d);
  if (i != 2)
    return 1;
}
------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.law/copy1.C
------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
#include <stdio.h>

int pass = 0;
class name {
  int namestuff;
public:
  name() {
    namestuff = 111;
  }
  name(const name& subject);

  name & operator = (const name& right) {
    this->namestuff = right.namestuff;
    return *this;
  }

  ~name() {
    ;
  }
};

name::name(const name& subject) {
    pass = 1;
}

class person {
  int personstuff;
  name personname;
public:
  person() {
```

```
    ;
    personstuff = 222;
  }
  ~person() {
    ;
  }
  void print() {
    ;
  }

};

void
test(person argp)
{
  person testp;

  ;
  argp.print();
  testp = argp;
  argp.print();
  testp.print();
  ;
}

int main()
{
  person mainp;
  test(mainp);
  if (pass)
    printf ("PASS\n");
  else
    { printf ("FAIL\n"); return 1; }
}

----------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.law/copy2.C
----------------------------------------------------------------------
// { dg-do assemble  }
// GROUPS passed copy-ctors
// copy file
// From: Vivek Khera <khera@cs.duke.edu>
// Date:     Mon, 15 Nov 1993 16:02:18 -0500
// Subject:  g++ 2.5.3 fails to automatically generate default initializer
// Message-ID: <9311152102.AA21248@thneed.cs.duke.edu>

class String
{
  private:
    char a[100];
    int len;
  public:
    String();
};

String::String()
{
    len = 0;
}
```

```
struct List
{
    String item[100];
    int num_items;
//    List();                   // uncomment this line to let compile work
};

int
main(int argc, char **argv)
{
    List a;
}
---------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy1.C
---------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
extern "C" int printf (const char *, ...);
int count = 0;

class C {
public:
  C (int) { count++; }
  operator int () { return 0; }
};

int
main ()
{
  C c1 (1);
  C c2 (c1);

  if (count != 1)
    { printf ("FAIL\n"); return 1; }
  else
    printf ("PASS\n");
}
---------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy3.C
---------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
/*

If I compile it with cfront (AT&T C++ Translator 2.00.02 08/25/89) and run it
I get:

        A::A()
        A::A(const A&)
        B::Bar()
        A::~A()
        A::~A()

If I compile it with g++ (gcc version 2.2.2) and run it I get:

        A::A()
        B::Bar()
```

```
        A::~A()
        A::~A()

*/
extern "C" int printf (const char *, ...);
extern "C" void exit (int);

int count = 0;

void
die (int x)
{
  if (x != ++count)
    {
      printf ("FAIL\n");
      exit (1);
    }
}


class A {
public:
  A() { die (1); }
  A(const A&) { die (2); }
  ~A() { count++; if (count != 4 && count != 5) die (-1); }
};

class B : public A {
public:
  void Bar() { die (3); }
};

void Foo(B b) { b.Bar(); }

int
main()
{
  B b;
  Foo(b);

  printf ("PASS\n");
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy7.C
-----------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
extern "C" int printf (const char *, ...);
extern "C" void exit (int);

void die () { printf ("FAIL\n"); exit (1); }

class B {
public:
  B() {}
  B(const B &) { printf ("PASS\n"); exit (0); }
private:
    int x;
};
```

```
class A : public B {
public:
    A() {}

  A(const B &) { printf ("FAIL\n"); exit (1); }
};

int
main()
{
    A a;
    A b(a);

    printf ("FAIL\n");
    return 1;
}
--------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy4.C
--------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
// Using Cfront 3.0.1 the programm below prints
//
//        A()
//        A(const A& a)
//        ~A()
//        A(A& a)        <---- !!!
//        ~A()
//        ~A()
//
// the g++ 2.2.2 (sparc-sun-sunos4.1) generated code prints
//
//        A()
//        A(const A& a)
//        ~A()
//        A(const A& a)  <---- !!!
//        ~A()
//        ~A()

extern "C" int printf (const char *, ...);
extern "C" void exit (int);

int count = 0;

void
die (int x)
{
  if (x != ++count)
    {
      printf ("FAIL\n");
      exit (1);
    }
}

class A {
public:
  A() { die (1); }
  A(const A& a) { die (2); }
```

```
  A(A& a) { die (4); }
  ~A() { count++; if (count != 3 && count != 5 && count != 6) die (-1); }
};

void foo1(const A& a) {
  A b = a;
}

void foo2( A& a) {
  A b = a;
}

int main() {
  A a;

  foo1(a);
  foo2(a);

  printf ("PASS\n");
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy9.C
-----------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
#include <iostream>

// token types: from state parser
const int T_EOF = 257;
const int T_ERROR = 258;
const int T_Float = 259;
const int T_Int = 260;
const int T_ID = 261;
const int T_STRING = 262;

class Complex;
class State;

// token, from state parser.
class ParseToken {
public:
        int tok;
        union {
                char cval;
                const char *sval;
                int intval;
                double  doubleval;
                Complex* Complexval;
                const State*  s;
        };
        ParseToken () { tok = 0; intval = 0;}
};

int
main () {
        ParseToken a;
        a.tok = T_Float;
        a.doubleval = 23.2;
        ParseToken b(a);
```

```
        if (b.doubleval == 23.2)
          std::cout << "PASS\n";
        else
          {
            std::cout << "FAIL\n";
            return 1;
          }
}

---------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy2.C
---------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
/*
The old g++ output is

Item()
Compound()
Pre foo
foo
~Compound()
~Item()
Post foo
~Compound()
~Item()

The output should be something like (produced from ATT 2.1)

Item()
Compound()
Pre foo
Item(const Item& i)    <------ missing above
foo
~Compound()
~Item()
Post foo
~Compound()
~Item()

*/

extern "C" int printf (const char *, ...);
extern "C" void exit (int);

int count = 0;

void
die (int x)
{
  if (x != ++count)
    {
      printf ("FAIL\n");
      exit (1);
    }
}
```

```
class Item {
 public:
  Item() { die (1); }
  Item(const Item& i) { die (4); }
  ~Item() { count++; if (count != 7 && count != 10) die (-1); }
};


class Compound {
  Item i;
 public:
  Compound() { die (2); }
  ~Compound() { count++; if (count != 6 && count != 9) die (-1); }
};


void foo(Compound a)
{
  die (5);
}

int
main()
{
  Compound a;

  die (3);
  foo(a);

  die (8);

  printf ("PASS\n");
}

----------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy6.C
----------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
/*
g++ 2.3.3 will prefer using type conversions over the
implicitly generated copy constructor. This is wrong.
If you explicitly define a copy constructor, it will
use it. However, the implicit copy constructor MUST be
called whenever an explicit one would have been called
also. See below: g++ converts from and back into
unsigned, instead of using the implicit copy constructor:
here is the version:
Reading specs from /usr/lib/gcc-lib/i386-linux/2.3.3/specs
gcc version 2.3.3
 /usr/lib/gcc-lib/i386-linux/2.3.3/cpp -lang-c++ -v -undef -D__GNUC__=2 -D__GNUG__=2 -D__cplusplus -Dunix -Di38
GNU CPP version 2.3.3 (80386, BSD syntax)
 /usr/lib/gcc-lib/i386-linux/2.3.3/cc1plus /usr/tmp/cca02008.i -quiet -dumpbase bug2.cc -version -o /usr/tmp/cc
GNU C++ version 2.3.3 (80386, BSD syntax) compiled by GNU C version 2.3.3.
 as -o /usr/tmp/cca020081.o /usr/tmp/cca02008.s
 ld /usr/lib/crt0.o -nojump -L/usr/lib/gcc-lib/i386-linux/2.3.3 /usr/tmp/cca020081.o -lg++ -lgcc -lc -lgcc

Ok, and here is the output:
test k: constructing from scratch
```

```
test l=k: type conversion into unsigned
constructing from unsigned

*/

extern "C" int printf (const char *, ...);
extern "C" void exit (int);

int count = 0;

void die () { printf ("FAIL\n"); exit (1); }

struct test {
        test() { if (count != 0) die (); }

        test(unsigned) {
          die ();
        }
        operator unsigned() {
          die ();
          return 0;
        }
};

int
main() {
  test k;
  test l=k;

  printf ("PASS\n");

  return 0;
}

--------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy5.C
--------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
/*
bad:
sibelius402> a.out
a=5  a.virtMember()=30
BaseClass::Increm --> {i=5, virtMember()=30}
a=7  a.virtMember()=30
b=7  b.virtMember()=30
BaseClass::Increm --> {i=7, virtMember()=999}
b=9  b.virtMember()=30
sibelius403>

 good:

sibelius406> a.out
a=5  a.virtMember()=30
BaseClass::Increm --> {i=5, virtMember()=30}
a=7  a.virtMember()=30
b=7  b.virtMember()=30
BaseClass::Increm --> {i=7, virtMember()=30}
b=9  b.virtMember()=30
```

```
*/

extern "C" int printf (const char *, ...);
extern "C" void exit (int);

void die () { printf ("FAIL\n"); exit (1); }

class BaseClass {

  friend int operator != (const BaseClass irv, int x);

  int i;

public:

  BaseClass( const BaseClass& ir ) : i(ir.i) {}
  BaseClass() : i(5) {}

  virtual int virtMember() { return( 999 ); }

  void Increm( int r );
};

void BaseClass::Increm( int r )
{
  if ((i == 5 && virtMember () == 30)
      || (i == 7 && virtMember () == 30))
    i += r;
  else
    die ();
}

class DerivedClass : public BaseClass {
public:
  int virtMember() { return( 30 ); }
};

int operator != (const BaseClass irv, int x) { return irv.i != x; }

int
main ()
{
    DerivedClass a;

    if (a != 5 || a.virtMember () != 30)
      die ();

    a.Increm(2);

    if (a != 7 || a.virtMember () != 30)
      die ();

    DerivedClass b = a;

    if (b != 7 || a.virtMember () != 30)
      die ();

    b.Increm(2);
```

```
    if (b != 9 || a.virtMember () != 30)
      die ();

    printf ("PASS\n");
}
--------------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.brendan/copy8.C
--------------------------------------------------------------------
// { dg-do run  }
// GROUPS passed copy-ctors
/*
This report is for GCC 2.3.3 running on a Sun/4.  The bug is that when
a class instance is passed-by-value, GCC does not correctly copy the value.
At the end of this report is an example program that demonstrates the bug.
It should print:

        construct A('x')
        copy A('x')
        destruct A('x')
        destruct A('x')

and in fact does for IBM's xlC C++.  However, for GCC 2.3.3, it fails
to print the second line ["copy A('x')"], which indicates that it failed
to call the copy-constructor for class A when it should have.  Below is a
typescript that lists the program, shows how I compiled it, and shows the
incorrect output.
*/

extern "C" int printf (const char *, ...);
extern "C" void exit (int);

int count = 0;

void
die (int x)
{
  if (x != ++count)
    {
      printf ("FAIL\n");
      exit (1);
    }
}

class A { // Class with explicit & instrumented copy-constructor and destructor.
public:
    const char * id;
    A( const char * id1 ) : id(id1) { die (1); }

    // Copy constructor
    A( const A& a ) : id(a.id) { die (2); }

    // Destructor
    ~A() { count++; if (count != 3 && count != 4) die (-1); }
};

class X { // Class without explicit copy-constructor
private:
    A a;
public:
```

```
    X( const char * id ) : a(id) {}
};

void Func( X x ) {      // Function with call-by-value argument
}

int
main() {
    X x("x");           // Construct instance of x.

    // The next line should call the copy-constructor for X since x is
    // being passed by value.  For GCC 2.3.3 on a Sun/4, it does not.
    Func(x);

    printf ("PASS\n");
    return 0;
}
-----------------------------------------------------------------
gcc/gcc/testsuite/g++.old-deja/g++.pt/copy1.C
-----------------------------------------------------------------
// { dg-do run  }
int i = 0;

template <class T>
class F
{
public:
  F() {}

  template <class T2> F(F<T2>)
    {
      i = 1;
    }
};


F<int>
foo()
{
  F<int> f1;
  F<int> f2(f1);
  return f1;
}

int
main()
{
  return i;
}

-----------------------------------------------------------------
gcc/gcc/testsuite/selftests/x86_64/copy-hard-reg-into-frame.rtl
-----------------------------------------------------------------
(function "copy_hard_reg_into_frame"
  (insn-chain
    (block 2
      (edge-from entry (flags "FALLTHRU"))
      (cinsn 1 (set (mem/c:SI
                      (plus:DI
```

```
                      (reg/f:DI frame)
                      (const_int -4))
                    [1 i+0 S4 A32])
               (reg:SI di [ i ])) "test.c":2
               (nil))
      (edge-to exit (flags "FALLTHRU"))
    ) ;; block 2
  ) ;; insn-chain
) ;; function
--------------------------------------------------------------------
gcc/gcc/testsuite/gcc.c-torture/execute/ieee/copysign1.c
--------------------------------------------------------------------
#include <string.h>
#include <stdlib.h>
#include <float.h>

#define fpsizeoff       sizeof(float)
#define fpsizeof        sizeof(double)
#define fpsizeofl       sizeof(long double)

/* Work around the fact that with the Intel double-extended precision,
   we've got a 10 byte type stuffed into some amount of padding.  And
   the fact that -ffloat-store is going to stuff this value temporarily
   into some bit of stack frame that we've no control over and can't zero.  */
#if LDBL_MANT_DIG == 64
# if defined(__i386__) || defined(__x86_64__) || defined (__ia64__)
#  undef fpsizeofl
#  define fpsizeofl     10
# endif
#endif

/* Work around the fact that the sign of the second double in the IBM
   double-double format is not strictly specified when it contains a zero.
   For instance, -0.0L can be represented with either (-0.0, +0.0) or
   (-0.0, -0.0).  The former is what we'll get from the compiler when it
   builds constants; the later is what we'll get from the negation operator
   at runtime.  */
/* ??? This hack only works for big-endian, which is fortunately true for
   AIX and, Darwin.  */
#if LDBL_MANT_DIG == 106
# undef fpsizeofl
# define fpsizeofl      sizeof(double)
#endif


#define TEST(TYPE, EXT)                                         \
TYPE c##EXT (TYPE x, TYPE y)                                    \
{                                                               \
  return __builtin_copysign##EXT (x, y);                        \
}                                                               \
                                                                \
struct D##EXT { TYPE x, y, z; };                                \
                                                                \
static const struct D##EXT T##EXT[] = {                         \
  { 1.0, 2.0, 1.0 },                                            \
  { 1.0, -2.0, -1.0 },                                          \
  { -1.0, -2.0, -1.0 },                                         \
  { 0.0, -2.0, -0.0 },                                          \
  { -0.0, -2.0, -0.0 },                                         \
```

```
  { -0.0, 2.0, 0.0 },                                           \
  { __builtin_inf##EXT (), -0.0, -__builtin_inf##EXT () },      \
  { -__builtin_nan##EXT (""), __builtin_inf##EXT (),            \
    __builtin_nan##EXT ("") }                                   \
};                                                              \
                                                                \
void test##EXT (void)                                           \
{                                                               \
  int i, n = sizeof (T##EXT) / sizeof (T##EXT[0]);              \
  TYPE r;                                                       \
  for (i = 0; i < n; ++i)                                       \
    {                                                           \
      r = c##EXT (T##EXT[i].x, T##EXT[i].y);                    \
      if (memcmp (&r, &T##EXT[i].z, fpsizeof##EXT) != 0)        \
        abort ();                                               \
    }                                                           \
}

TEST(float, f)
TEST(double, )
TEST(long double, l)

int main()
{
  testf();
  test();
  testl();
  return 0;
}
----------------------------------------------------------------
gcc/gcc/testsuite/gcc.c-torture/execute/ieee/copysign2.c
----------------------------------------------------------------
#include <string.h>
#include <stdlib.h>
#include <float.h>

#define fpsizeoff       sizeof(float)
#define fpsizeof        sizeof(double)
#define fpsizeofl       sizeof(long double)

/* Work around the fact that with the Intel double-extended precision,
   we've got a 10 byte type stuffed into some amount of padding.  And
   the fact that -ffloat-store is going to stuff this value temporarily
   into some bit of stack frame that we've no control over and can't zero.  */
#if LDBL_MANT_DIG == 64
# if defined(__i386__) || defined(__x86_64__) || defined (__ia64__)
#  undef fpsizeofl
#  define fpsizeofl     10
# endif
#endif

/* Work around the fact that the sign of the second double in the IBM
   double-double format is not strictly specified when it contains a zero.
   For instance, -0.0L can be represented with either (-0.0, +0.0) or
   (-0.0, -0.0).  The former is what we'll get from the compiler when it
   builds constants; the later is what we'll get from the negation operator
   at runtime.  */
/* ??? This hack only works for big-endian, which is fortunately true for
   AIX and Darwin.  */
```

```
#if LDBL_MANT_DIG == 106
# undef fpsizeofl
# define fpsizeofl      sizeof(double)
#endif


#define TEST(TYPE, EXT)                                             \
static TYPE Y##EXT[] = {                                            \
  2.0, -2.0, -2.0, -2.0, -2.0, 2.0, -0.0, __builtin_inf##EXT () \
};                                                                  \
static const TYPE Z##EXT[] = {                                      \
  1.0, -1.0, -1.0, -0.0, -0.0, 0.0, -__builtin_inf##EXT (),     \
  __builtin_nan##EXT ("")                                           \
};                                                                  \
                                                                    \
void test##EXT (void)                                               \
{                                                                   \
  TYPE r[8];                                                        \
  int i;                                                            \
  r[0] = __builtin_copysign##EXT (1.0, Y##EXT[0]);              \
  r[1] = __builtin_copysign##EXT (1.0, Y##EXT[1]);              \
  r[2] = __builtin_copysign##EXT (-1.0, Y##EXT[2]);             \
  r[3] = __builtin_copysign##EXT (0.0, Y##EXT[3]);              \
  r[4] = __builtin_copysign##EXT (-0.0, Y##EXT[4]);             \
  r[5] = __builtin_copysign##EXT (-0.0, Y##EXT[5]);             \
  r[6] = __builtin_copysign##EXT (__builtin_inf##EXT (), Y##EXT[6]); \
  r[7] = __builtin_copysign##EXT (-__builtin_nan##EXT (""), Y##EXT[7]); \
  for (i = 0; i < 8; ++i)                                           \
    if (memcmp (r+i, Z##EXT+i, fpsizeof##EXT) != 0)             \
      abort ();                                                     \
}

TEST(float, f)
TEST(double, )
TEST(long double, l)

int main()
{
  testf();
  test();
  testl();
  return 0;
}
---------------------------------------------------------------------
gcc/gcc/testsuite/gcc.target/powerpc/copysign128-1.c
---------------------------------------------------------------------
/* { dg-do run { target { powerpc64*-*-* && vsx_hw } } } */
/* { dg-options "-mfloat128 -mvsx" } */

void abort ();

typedef unsigned long long int uint64_t;

typedef union
{
  __float128 value;

  struct
  {
```

```
#if __BYTE_ORDER__ == __ORDER_BIG_ENDIAN__
    unsigned negative:1;
    unsigned exponent:15;
    unsigned quiet_nan:1;
    uint64_t mant_high:47;
    uint64_t mant_low:64;
#else
    uint64_t mant_low:64;
    uint64_t mant_high:47;
    unsigned quiet_nan:1;
    unsigned exponent:15;
    unsigned negative:1;
#endif
  } nan;

} ieee854_float128;

int
main (int argc, int *argv[])
{
  ieee854_float128 x, y, z;

  x.nan.negative = 0;
  x.nan.exponent = 0x22;
  x.nan.quiet_nan = 0;
  x.nan.mant_high = 0x1234;
  x.nan.mant_low = 0xabcdef;

  y.nan.negative = 1;
  y.nan.exponent = 0;
  y.nan.quiet_nan = 0;
  y.nan.mant_high = 0;
  y.nan.mant_low = 0;

  z.value = __builtin_copysignq (x.value, y.value);

  if (z.nan.negative != 1
      || z.nan.exponent != 0x22
      || z.nan.quiet_nan != 0
      || z.nan.mant_high != 0x1234
      || z.nan.mant_low != 0xabcdef)
    abort ();

  return 0;
}
---------------------------------------------------------------------
gcc/gcc/testsuite/gcc.target/aarch64/copysign_2.c
---------------------------------------------------------------------
/* { dg-do run } */
/* { dg-options "-O2 --save-temps" } */

float fabsf (float);

float
check (float x, float y)
{
  return __builtin_copysignf (x, y);
}
```

```
float
check1 (float x)
{
  return __builtin_copysignf (x, 1.0);
}

float
check2 (float x)
{
  return __builtin_copysignf (1.0, x);
}

float
check3 (float x)
{
  return -__builtin_copysignf (x, 1.0);
}

float
check4 (float x, float y)
{
  return x * __builtin_copysignf (x, y);
}

float
check5 (float x, float y)
{
  return __builtin_copysignf (-x, -y);
}

int
main (int argc, char** argv)
{
  float x = 2.0f;
  float y = -5.0f;
  float epsilon = 0.00001f;

  float expected = -2.0f;

  if (fabsf (check (x, y) - expected) >= epsilon)
    __builtin_abort ();

  expected = 2.0f;

  if (fabsf (check1 (x) - expected) >= epsilon)
    __builtin_abort ();

  expected = 1.0f;

  if (fabsf (check2 (x) - expected) >= epsilon)
    __builtin_abort ();

  expected = -2.0f;

  if (fabsf (check3 (x) - expected) >= epsilon)
    __builtin_abort ();

  expected = -4.0f;
```

```
  if (fabsf (check4 (x, y) - expected) >= epsilon)
    __builtin_abort ();

  expected = 2.0f;

  if (fabsf (check5 (x, y) - expected) >= epsilon)
    __builtin_abort ();
}

/* { dg-final { scan-assembler-not "copysign\tw" } } */

----------------------------------------------------------------
gcc/gcc/testsuite/gcc.target/aarch64/copysign_1.c
----------------------------------------------------------------
/* { dg-do run } */
/* { dg-options "-O2 --save-temps" } */

double fabs (double);

double
check (double x, double y)
{
  return __builtin_copysign (x, y);
}

double
check1 (double x)
{
  return __builtin_copysign (x, 1.0);
}

double
check2 (double x)
{
  return __builtin_copysign (1.0, x);
}

double
check3 (double x)
{
  return -__builtin_copysign (x, 1.0);
}

double
check4 (double x, double y)
{
  return x * __builtin_copysign (x, y);
}

double
check5 (double x, double y)
{
  return __builtin_copysign (-x, -y);
}

int
main (int argc, char** argv)
{
  double x = 2.0;
```

```
  double y = -5.0;
  double epsilon = 0.00001;

  double expected = -2.0;

  if (fabs (check (x, y) - expected) >= epsilon)
    __builtin_abort ();

  expected = 2.0;

  if (fabs (check1 (x) - expected) >= epsilon)
    __builtin_abort ();

  expected = 1.0;

  if (fabs (check2 (x) - expected) >= epsilon)
    __builtin_abort ();

  expected = -2.0;

  if (fabs (check3 (x) - expected) >= epsilon)
    __builtin_abort ();

  expected = -4.0;

  if (fabs (check4 (x, y) - expected) >= epsilon)
    __builtin_abort ();

  expected = 2.0;

  if (fabs (check5 (x, y) - expected) >= epsilon)
    __builtin_abort ();
}

/* { dg-final { scan-assembler-not "copysign\tw" } } */

---------------------------------------------------------------
gcc/gcc/testsuite/gcc.target/arm/copysign_softfloat_1.c
---------------------------------------------------------------
/* { dg-do run } */
/* { dg-require-effective-target arm_thumb2_ok } */
/* { dg-skip-if "skip override" { *-*-* } { "-mfloat-abi=softfp" "-mfloat-abi=hard" } { "" } } */
/* { dg-options "-O2 -mfloat-abi=soft --save-temps" } */
extern void abort (void);

#define N 16

float a_f[N] = {-0.1f, -3.2f, -6.3f, -9.4f,
                -12.5f, -15.6f, -18.7f, -21.8f,
                24.9f, 27.1f, 30.2f, 33.3f,
                36.4f, 39.5f, 42.6f, 45.7f};

float b_f[N] = {-1.2f, 3.4f, -5.6f, 7.8f,
                -9.0f, 1.0f, -2.0f, 3.0f,
                -4.0f, -5.0f, 6.0f, 7.0f,
                -8.0f, -9.0f, 10.0f, 11.0f};

float c_f[N] = {-0.1f, 3.2f, -6.3f, 9.4f,
                -12.5f, 15.6f, -18.7f, 21.8f,
```

```
                -24.9f, -27.1f, 30.2f, 33.3f,
                -36.4f, -39.5f, 42.6f, 45.7f};

double a_d[N] = {-0.1, -3.2, -6.3, -9.4,
                 -12.5, -15.6, -18.7, -21.8,
                 24.9, 27.1, 30.2, 33.3,
                 36.4, 39.5, 42.6, 45.7};

double b_d[N] = {-1.2, 3.4, -5.6, 7.8,
                 -9.0, 1.0, -2.0, 3.0,
                 -4.0, -5.0, 6.0, 7.0,
                 -8.0, -9.0, 10.0, 11.0};

double c_d[N] = {-0.1, 3.2, -6.3, 9.4,
                 -12.5, 15.6, -18.7, 21.8,
                 -24.9, -27.1, 30.2, 33.3,
                 -36.4, -39.5, 42.6, 45.7};

int
main (int argc, char **argv)
{
  int index = 0;

/* { dg-final { scan-assembler-times "bfi" 2 } } */
/* { dg-final { scan-assembler-times "lsr" 1 } } */
  for (index; index < N; index++)
    {
      if (__builtin_copysignf (a_f[index], b_f[index]) != c_f[index])
        abort();
    }

  for (index = 0; index < N; index++)
    {
      if (__builtin_copysign (a_d[index], b_d[index]) != c_d[index])
        abort();
    }

  return 0;
}

------------------------------------------------------------------
gcc/gcc/testsuite/go.test/test/copy.go
------------------------------------------------------------------
// run

// Copyright 2009 The Go Authors. All rights reserved.
// Use of this source code is governed by a BSD-style
// license that can be found in the LICENSE file.

// Semi-exhaustive test for the copy predeclared function.

package main

import (
        "fmt"
        "os"
)

const N = 40
```

```
var input8 = make([]uint8, N)
var output8 = make([]uint8, N)
var input16 = make([]uint16, N)
var output16 = make([]uint16, N)
var input32 = make([]uint32, N)
var output32 = make([]uint32, N)
var input64 = make([]uint64, N)
var output64 = make([]uint64, N)
var inputS string
var outputS = make([]uint8, N)

type my8 []uint8
type my16 []uint16
type my32 []uint32
type my32b []uint32
type my64 []uint64
type myS string

func u8(i int) uint8 {
        i = 'a' + i%26
        return uint8(i)
}

func u16(ii int) uint16 {
        var i = uint16(ii)
        i = 'a' + i%26
        i |= i << 8
        return i
}

func u32(ii int) uint32 {
        var i = uint32(ii)
        i = 'a' + i%26
        i |= i << 8
        i |= i << 16
        return i
}

func u64(ii int) uint64 {
        var i = uint64(ii)
        i = 'a' + i%26
        i |= i << 8
        i |= i << 16
        i |= i << 32
        return i
}

func reset() {
        // swap in and out to exercise copy-up and copy-down
        input8, output8 = output8, input8
        input16, output16 = output16, input16
        input32, output32 = output32, input32
        input64, output64 = output64, input64
        in := 0
        out := 13
        for i := range input8 {
                input8[i] = u8(in)
                output8[i] = u8(out)
```

```
                outputS[i] = u8(out)
                input16[i] = u16(in)
                output16[i] = u16(out)
                input32[i] = u32(in)
                output32[i] = u32(out)
                input64[i] = u64(in)
                output64[i] = u64(out)
                in++
                out++
        }
        inputS = string(input8)
}

func clamp(n int) int {
        if n > N {
                return N
        }
        return n
}

func ncopied(length, in, out int) int {
        n := length
        if in+n > N {
                n = N - in
        }
        if out+n > N {
                n = N - out
        }
        return n
}

func doAllSlices(length, in, out int) {
        reset()
        n := copy(my8(output8[out:clamp(out+length)]), input8[in:clamp(in+length)])
        verify8(length, in, out, n)
        n = copy(my8(outputS[out:clamp(out+length)]), myS(inputS[in:clamp(in+length)]))
        verifyS(length, in, out, n)
        n = copy(my16(output16[out:clamp(out+length)]), input16[in:clamp(in+length)])
        verify16(length, in, out, n)
        n = copy(my32(output32[out:clamp(out+length)]), my32b(input32[in:clamp(in+length)]))
        verify32(length, in, out, n)
        n = copy(my64(output64[out:clamp(out+length)]), input64[in:clamp(in+length)])
        verify64(length, in, out, n)
}

func bad8(state string, i, length, in, out int) {
        fmt.Printf("%s bad(%d %d %d): %c not %c:\n\t%s\n\t%s\n",
                state,
                length, in, out,
                output8[i],
                uint8(i+13),
                input8, output8)
        os.Exit(1)
}

func verify8(length, in, out, m int) {
        n := ncopied(length, in, out)
        if m != n {
                fmt.Printf("count bad(%d %d %d): %d not %d\n", length, in, out, m, n)
```

```
                os.Exit(1)
                return
        }
        // before
        var i int
        for i = 0; i < out; i++ {
                if output8[i] != u8(i+13) {
                        bad8("before8", i, length, in, out)
                        return
                }
        }
        // copied part
        for ; i < out+n; i++ {
                if output8[i] != u8(i+in-out) {
                        bad8("copied8", i, length, in, out)
                        return
                }
        }
        // after
        for ; i < len(output8); i++ {
                if output8[i] != u8(i+13) {
                        bad8("after8", i, length, in, out)
                        return
                }
        }
}

func badS(state string, i, length, in, out int) {
        fmt.Printf("%s bad(%d %d %d): %c not %c:\n\t%s\n\t%s\n",
                state,
                length, in, out,
                outputS[i],
                uint8(i+13),
                inputS, outputS)
        os.Exit(1)
}

func verifyS(length, in, out, m int) {
        n := ncopied(length, in, out)
        if m != n {
                fmt.Printf("count bad(%d %d %d): %d not %d\n", length, in, out, m, n)
                os.Exit(1)
                return
        }
        // before
        var i int
        for i = 0; i < out; i++ {
                if outputS[i] != u8(i+13) {
                        badS("beforeS", i, length, in, out)
                        return
                }
        }
        // copied part
        for ; i < out+n; i++ {
                if outputS[i] != u8(i+in-out) {
                        badS("copiedS", i, length, in, out)
                        return
                }
        }
```

```
        // after
        for ; i < len(outputS); i++ {
                if outputS[i] != u8(i+13) {
                        badS("afterS", i, length, in, out)
                        return
                }
        }
}

func bad16(state string, i, length, in, out int) {
        fmt.Printf("%s bad(%d %d %d): %x not %x:\n\t%v\n\t%v\n",
                state,
                length, in, out,
                output16[i],
                uint16(i+13),
                input16, output16)
        os.Exit(1)
}

func verify16(length, in, out, m int) {
        n := ncopied(length, in, out)
        if m != n {
                fmt.Printf("count bad(%d %d %d): %d not %d\n", length, in, out, m, n)
                os.Exit(1)
                return
        }
        // before
        var i int
        for i = 0; i < out; i++ {
                if output16[i] != u16(i+13) {
                        bad16("before16", i, length, in, out)
                        return
                }
        }
        // copied part
        for ; i < out+n; i++ {
                if output16[i] != u16(i+in-out) {
                        bad16("copied16", i, length, in, out)
                        return
                }
        }
        // after
        for ; i < len(output16); i++ {
                if output16[i] != u16(i+13) {
                        bad16("after16", i, length, in, out)
                        return
                }
        }
}

func bad32(state string, i, length, in, out int) {
        fmt.Printf("%s bad(%d %d %d): %x not %x:\n\t%v\n\t%v\n",
                state,
                length, in, out,
                output32[i],
                uint32(i+13),
                input32, output32)
        os.Exit(1)
}
```

```
func verify32(length, in, out, m int) {
        n := ncopied(length, in, out)
        if m != n {
                fmt.Printf("count bad(%d %d %d): %d not %d\n", length, in, out, m, n)
                os.Exit(1)
                return
        }
        // before
        var i int
        for i = 0; i < out; i++ {
                if output32[i] != u32(i+13) {
                        bad32("before32", i, length, in, out)
                        return
                }
        }
        // copied part
        for ; i < out+n; i++ {
                if output32[i] != u32(i+in-out) {
                        bad32("copied32", i, length, in, out)
                        return
                }
        }
        // after
        for ; i < len(output32); i++ {
                if output32[i] != u32(i+13) {
                        bad32("after32", i, length, in, out)
                        return
                }
        }
}

func bad64(state string, i, length, in, out int) {
        fmt.Printf("%s bad(%d %d %d): %x not %x:\n\t%v\n\t%v\n",
                state,
                length, in, out,
                output64[i],
                uint64(i+13),
                input64, output64)
        os.Exit(1)
}

func verify64(length, in, out, m int) {
        n := ncopied(length, in, out)
        if m != n {
                fmt.Printf("count bad(%d %d %d): %d not %d\n", length, in, out, m, n)
                os.Exit(1)
                return
        }
        // before
        var i int
        for i = 0; i < out; i++ {
                if output64[i] != u64(i+13) {
                        bad64("before64", i, length, in, out)
                        return
                }
        }
        // copied part
        for ; i < out+n; i++ {
```

```
                if output64[i] != u64(i+in-out) {
                        bad64("copied64", i, length, in, out)
                        return
                }
        }
        // after
        for ; i < len(output64); i++ {
                if output64[i] != u64(i+13) {
                        bad64("after64", i, length, in, out)
                        return
                }
        }
}

func slice() {
        for length := 0; length < N; length++ {
                for in := 0; in <= 32; in++ {
                        for out := 0; out <= 32; out++ {
                                doAllSlices(length, in, out)
                        }
                }
        }
}

// Array test. Can be much simpler. It's only checking for correct handling of [0:].
func array() {
        var array [N]uint8
        reset()
        copy(array[0:], input8)
        for i := 0; i < N; i++ {
                output8[i] = 0
        }
        copy(output8, array[0:])
        verify8(N, 0, 0, N)
}

func main() {
        slice()
        array()
}
-------------------------------------------------------------
gcc/gcc/testsuite/gcc.dg/params/LICENSE
-------------------------------------------------------------

------------------------------------------------------------------------

This program, "bzip2", the associated library "libbzip2", and all
documentation, are copyright (C) 1996-2010 Julian R Seward.  All
rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must
   not claim that you wrote the original software.  If you use this
```

```
   software in a product, an acknowledgment in the product
   documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must
   not be misrepresented as being the original software.

4. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior written
   permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org
bzip2/libbzip2 version 1.0.6 of 6 September 2010

--------------------------------------------------------------------------------
--------------------------------------------------------------------
gcc/gcc/testsuite/gcc.dg/tree-ssa/copy-headers.c
--------------------------------------------------------------------
/* { dg-do compile } */
/* { dg-options "-O2 -fdump-tree-ch2-details" } */

extern int foo (int);

void bla (void)
{
  int i, n = foo (0);

  for (i = 0; i < n; i++)
    foo (i);
}

/* There should be a header duplicated.  */
/* { dg-final { scan-tree-dump-times "Duplicating header" 1 "ch2"} } */
--------------------------------------------------------------------
gcc/gcc/testsuite/gcc.dg/gomp/copyin-1.c
--------------------------------------------------------------------
// { dg-do compile }
// { dg-require-effective-target tls }

int i, j;

#pragma omp threadprivate (i)

void bar(void);
void foo(void)
{
  int k;
  extern int l;
```

```
  extern int m;

#pragma omp threadprivate (m)

  #pragma omp parallel copyin(i)
    bar();
  #pragma omp parallel copyin(j)        // { dg-error "threadprivate" }
    bar();
  #pragma omp parallel copyin(k)        // { dg-error "threadprivate" }
    bar();
  #pragma omp parallel copyin(l)        // { dg-error "threadprivate" }
    bar();
  #pragma omp parallel copyin(m)
    bar();
}
```

---

gcc/COPYING3

```
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
```

giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through

a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a

covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section

7. This requirement modifies the requirement in section 4 to
"keep intact all notices".

c) You must license the entire work, as a whole, under this
License to anyone who comes into possession of a copy. This
License will therefore apply, along with any applicable section 7
additional terms, to the whole of the work, and all its parts,
regardless of how they are packaged. This License gives no
permission to license the work in any other way, but it does not
invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display
Appropriate Legal Notices; however, if the Program has interactive
interfaces that do not display Appropriate Legal Notices, your
work need not make them do so.

A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

a) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by the
Corresponding Source fixed on a durable physical medium
customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no

```
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.
```

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does

not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an

organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or

arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the

option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least

```
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gcc/libffi/LICENSE
----------------------------------------------------------------------
libffi - Copyright (c) 1996-2014  Anthony Green, Red Hat, Inc and others.
See source files for details.

Permission is hereby granted, free of charge, to any person obtaining
a copy of this software and associated documentation files (the
``Software''), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, sublicense, and/or sell copies of the Software, and to
permit persons to whom the Software is furnished to do so, subject to
the following conditions:

The above copyright notice and this permission notice shall be
included in all copies or substantial portions of the Software.
```

```
THE SOFTWARE IS PROVIDED ``AS IS'', WITHOUT WARRANTY OF ANY KIND,
EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY
CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT,
TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE
SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
-----------------------------------------------------------------
gcc/include/COPYING3
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.
```

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the

work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose

of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,

regardless of how they are packaged. This License gives no
permission to license the work in any other way, but it does not
invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display
Appropriate Legal Notices; however, if the Program has interactive
interfaces that do not display Appropriate Legal Notices, your
work need not make them do so.

A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

a) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by the
Corresponding Source fixed on a durable physical medium
customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the

```
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.
```

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

```
  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.
```

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

```
  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License.  You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all.  For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation.  If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
```

versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by

```
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gcc/include/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.
```

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

```
  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)


These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:
```

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to

this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free

Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

```
Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
gcc/COPYING.RUNTIME
----------------------------------------------------------------------
GCC RUNTIME LIBRARY EXCEPTION

Version 3.1, 31 March 2009

Copyright (C) 2009 Free Software Foundation, Inc. <http://fsf.org/>

Everyone is permitted to copy and distribute verbatim copies of this
license document, but changing it is not allowed.

This GCC Runtime Library Exception ("Exception") is an additional
permission under section 7 of the GNU General Public License, version
3 ("GPLv3"). It applies to a given file (the "Runtime Library") that
bears a notice placed by the copyright holder of the file stating that
the file is governed by GPLv3 along with this Exception.

When you use GCC to compile a program, GCC may combine portions of
certain GCC header files and runtime libraries with the compiled
program. The purpose of this Exception is to allow compilation of
non-GPL (including proprietary) programs to use, in this way, the
header files and runtime libraries covered by this Exception.

0. Definitions.

A file is an "Independent Module" if it either requires the Runtime
Library for execution after a Compilation Process, or makes use of an
interface provided by the Runtime Library, but is not otherwise based
```

on the Runtime Library.

"GCC" means a version of the GNU Compiler Collection, with or without
modifications, governed by version 3 (or a specified later version) of
the GNU General Public License (GPL) with the option of using any
subsequent versions published by the FSF.

"GPL-compatible Software" is software whose conditions of propagation,
modification and use would permit combination with GCC in accord with
the license of GCC.

"Target Code" refers to output from any compiler for a real or virtual
target processor architecture, in executable form or suitable for
input to an assembler, loader, linker and/or execution
phase. Notwithstanding that, Target Code does not include data in any
format that is used as a compiler intermediate representation, or used
for producing a compiler intermediate representation.

The "Compilation Process" transforms code entirely represented in
non-intermediate languages designed for human-written code, and/or in
Java Virtual Machine byte code, into Target Code. Thus, for example,
use of source code generators and preprocessors need not be considered
part of the Compilation Process, since the Compilation Process can be
understood as starting with the output of the generators or
preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or
with other GPL-compatible software, or if it is done without using any
work based on GCC. For example, using non-GPL-compatible Software to
optimize any GCC intermediate representations would not qualify as an
Eligible Compilation Process.

1. Grant of Additional Permission.

You have permission to propagate a work of Target Code formed by
combining the Runtime Library with Independent Modules, even if such
propagation would otherwise violate the terms of GPLv3, provided that
all Target Code was generated by Eligible Compilation Processes. You
may then convey such a combination under terms of your choice,
consistent with the licensing of the Independent Modules.

2. No Weakening of GCC Copyleft.

The availability of this Exception does not imply any general
presumption that third-party software is unaffected by the copyleft
requirements of the license of GCC.

----
gcc/zlib/contrib/dotzlib/LICENSE_1_0.txt

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

```
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.--------------------------------------------------------------------------
gcc/COPYING
------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
```

that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

```
    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)


These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
```

special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the

integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY

YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year  name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

<signature of Ty Coon>, 1 April 1989

```
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
gcc/COPYING3.LIB
----------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library.  The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
```

facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library. You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

```
        1) Use a suitable shared library mechanism for linking with the
        Library.  A suitable mechanism is one that (a) uses at run time
        a copy of the Library already present on the user's computer
        system, and (b) will operate properly with a modified version
        of the Library that is interface-compatible with the Linked
        Version.

    e) Provide Installation Information, but only if you would otherwise
    be required to provide such information under section 6 of the
    GNU GPL, and only to the extent that such information is
    necessary to install and execute a modified version of the
    Combined Work produced by recombining or relinking the
    Application with a modified version of the Linked Version. (If
    you use option 4d0, the Installation Information must accompany
    the Minimal Corresponding Source and Corresponding Application
    Code. If you use option 4d1, you must provide the Installation
    Information in the manner specified by section 6 of the GNU GPL
    for conveying Corresponding Source.)

  5. Combined Libraries.

  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

    a) Accompany the combined library with a copy of the same work based
    on the Library, uncombined with any other library facilities,
    conveyed under the terms of this License.

    b) Give prominent notice with the combined library that part of it
    is a work based on the Library, and explaining where to find the
    accompanying uncombined form of the same work.

  6. Revised Versions of the GNU Lesser General Public License.

  The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----------------------------------------------------------------------
gcc/libquadmath/COPYING.LIB
```

```
------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.
```

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a

medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked

```
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library.  (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library.  A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.


  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.
```

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest

```
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


------------------------------------------------------------------
gcc/libquadmath/math/copysignq.c
------------------------------------------------------------------
/* copysignq.c -- __float128 version of s_copysign.c.
 * Conversion to long double by Jakub Jelinek, jj@ultra.linux.cz.
 */

/*
 * ====================================================
 * Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.
 *
 * Developed at SunPro, a Sun Microsystems, Inc. business.
 * Permission to use, copy, modify, and distribute this
 * software is freely granted, provided that this notice
 * is preserved.
 * ====================================================
 */
```

```
#include "quadmath-imp.h"

__float128
copysignq (__float128 x, __float128 y)
{
  uint64_t hx,hy;
  GET_FLT128_MSW64(hx,x);
  GET_FLT128_MSW64(hy,y);
  SET_FLT128_MSW64(x,(hx&0x7fffffffffffffffULL)|(hy&0x8000000000000000ULL));
  return x;
}
------------------------------------------------------------------
gcc/libstdc++-v3/doc/html/manual/license.html
------------------------------------------------------------------
<?xml version="1.0" encoding="UTF-8" standalone="no"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1
    There are two licenses affecting GNU libstdc++: one for the code,
    and one for the documentation.
    </p><p>
      There is a license section in the FAQ regarding common <a class="link" href="../faq.html#faq.lic
      questions, ask the FSF or the <a class="link" href="http://gcc.gnu.org/lists.html" target="_top"
    </p><div class="section"><div class="titlepage"><div><div><h3 class="title"><a id="manual.intro.st
      The source code is distributed under the <a class="link" href="appendix_gpl.html" title="Appendi
      with the addition under section 7 of an exception described in
      the <span class="quote“"><span class="quote">GCC Runtime Library Exception, version 3.1</span”><
      as follows (or see the file COPYING.RUNTIME):
    </p><div class="literallayout"><p><br />
GCC RUNTIME LIBRARY EXCEPTION<br />
<br />
Version 3.1, 31 March 2009<br />
<br />
Copyright (C) 2009 <a class="link" href="http://www.fsf.org" target="_top">Free Software Foundation, I
<br />
Everyone is permitted to copy and distribute verbatim copies of this<br />
license document, but changing it is not allowed.<br />
<br />
This GCC Runtime Library Exception ("Exception") is an additional<br />
permission under section 7 of the GNU General Public License, version<br />
3 ("GPLv3"). It applies to a given file (the "Runtime Library") that<br />
bears a notice placed by the copyright holder of the file stating that<br />
the file is governed by GPLv3 along with this Exception.<br />
<br />
When you use GCC to compile a program, GCC may combine portions of<br />
certain GCC header files and runtime libraries with the compiled<br />
program. The purpose of this Exception is to allow compilation of<br />
non-GPL (including proprietary) programs to use, in this way, the<br />
header files and runtime libraries covered by this Exception.<br />
<br />
0. Definitions.<br />
<br />
A file is an "Independent Module" if it either requires the Runtime<br />
Library for execution after a Compilation Process, or makes use of an<br />
interface provided by the Runtime Library, but is not otherwise based<br />
on the Runtime Library.<br />
<br />
"GCC" means a version of the GNU Compiler Collection, with or without<br />
modifications, governed by version 3 (or a specified later version) of<br />
the GNU General Public License (GPL) with the option of using any<br />
```

subsequent versions published by the FSF.

"GPL-compatible Software" is software whose conditions of propagation,
modification and use would permit combination with GCC in accord with
the license of GCC.

"Target Code" refers to output from any compiler for a real or virtual
target processor architecture, in executable form or suitable for
input to an assembler, loader, linker and/or execution
phase. Notwithstanding that, Target Code does not include data in any
format that is used as a compiler intermediate representation, or used
for producing a compiler intermediate representation.

The "Compilation Process" transforms code entirely represented in
non-intermediate languages designed for human-written code, and/or in
Java Virtual Machine byte code, into Target Code. Thus, for example,
use of source code generators and preprocessors need not be considered
part of the Compilation Process, since the Compilation Process can be
understood as starting with the output of the generators or
preprocessors.

A Compilation Process is "Eligible" if it is done using GCC, alone or
with other GPL-compatible software, or if it is done without using any
work based on GCC. For example, using non-GPL-compatible Software to
optimize any GCC intermediate representations would not qualify as an
Eligible Compilation Process.

1. Grant of Additional Permission.

You have permission to propagate a work of Target Code formed by
combining the Runtime Library with Independent Modules, even if such
propagation would otherwise violate the terms of GPLv3, provided that
all Target Code was generated by Eligible Compilation Processes. You
may then convey such a combination under terms of your choice,
consistent with the licensing of the Independent Modules.

2. No Weakening of GCC Copyleft.

The availability of this Exception does not imply any general
presumption that third-party software is unaffected by the copyleft
requirements of the license of GCC.

      Hopefully that text is self-explanatory. If it isn't, you need to speak
      to your lawyer, or the Free Software Foundation.
    <h3 class="title"><a id="manual.intro.statu
      The documentation shipped with the library and made available over
      the web, excluding the pages generated from source comments, are
      copyrighted by the Free Software Foundation, and placed under the
       GNU Free Do
      License version 1.3. There are no Front-Cover Texts, no
      Back-Cover Texts, and no Invariant Sections.

      For documentation generated by doxygen or other automated tools
      via processing source code comments and markup, the original source
      code license applies to the generated files. Thus, the doxygen
      documents are licensed <a class="link" href="appendix_gpl.html" title="Appendix D. GNU General Public Li

      If you plan on making copies of the documentation, please let us know.
      We can probably offer suggestions.

```
    </p></div></div><div class="navfooter"><hr /><table width="100%" summary="Navigation footer"><tr><
gcc/libstdc++-v3/testsuite/19_diagnostics/error_category/cons/copy_neg.cc
---------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// 2007-08-22 Benjamin Kosnik  <bkoz@redhat.com>

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <system_error>
#include <testsuite_error.h>

int main()
{
  __gnu_test::test_category c1;
  __gnu_test::test_category c2(c1); // { dg-error "deleted" }

  return 0;
}

// { dg-prune-output "testsuite_error" }
// { dg-prune-output "include" }
---------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/tr1/2_general_utilities/shared_ptr/cons/copy.cc
---------------------------------------------------------------------
// Copyright (C) 2005-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// TR1 2.2.2 Template class shared_ptr [tr.util.smartptr.shared]

#include <tr1/memory>
```

```
#include <testsuite_hooks.h>

struct A
{
  A() { ++ctor_count; }
  virtual ~A() { ++dtor_count; }
  static long ctor_count;
  static long dtor_count;
};
long A::ctor_count = 0;
long A::dtor_count = 0;

struct B : A
{
  B() { ++ctor_count; }
  virtual ~B() { ++dtor_count; }
  static long ctor_count;
  static long dtor_count;
};
long B::ctor_count = 0;
long B::dtor_count = 0;

void deleter(A* p) { delete p; }

struct reset_count_struct
{
  ~reset_count_struct()
  {
    A::ctor_count = 0;
    A::dtor_count = 0;
    B::ctor_count = 0;
    B::dtor_count = 0;
  }
};

// 2.2.3.1 shared_ptr constructors [tr.util.smartptr.shared.const]

// Copy construction
int test01()
{
  reset_count_struct __attribute__((unused)) reset;

  std::tr1::shared_ptr<A> a1;
  std::tr1::shared_ptr<A> a2(a1);
  VERIFY( a2.use_count() == 0 );
  VERIFY( A::ctor_count == 0 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test02()
{
  reset_count_struct __attribute__((unused)) reset;

  std::tr1::shared_ptr<A> a1(new A);
```

```
  std::tr1::shared_ptr<A> a2(a1);
  VERIFY( a2.use_count() == 2 );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test03()
{
  reset_count_struct __attribute__((unused)) reset;

  std::tr1::shared_ptr<B> b(new B);
  std::tr1::shared_ptr<A> a(b);
  VERIFY( a.use_count() == 2 );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 1 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test04()
{
  reset_count_struct __attribute__((unused)) reset;

  std::tr1::shared_ptr<B> b(new B, &deleter);
  std::tr1::shared_ptr<A> a(b);
  VERIFY( a.use_count() == 2 );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 1 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
main()
{
  test01();
  test02();
  test03();
  test04();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/shared_mutex/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile }
// { dg-options "-std=gnu++17" }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }
```

```
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <shared_mutex>

void test01()
{
  // assign
  typedef std::shared_mutex mutex_type;
  mutex_type m1;
  mutex_type m2(m1);            // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/timed_mutex/cons/copy_neg.cc
-----------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <mutex>

void test01()
{
  // assign
  typedef std::timed_mutex mutex_type;
```

```
  mutex_type m1;
  mutex_type m2(m1);            // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/packaged_task/cons/copy_neg.cc
-------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2009-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <future>

void test01()
{
  // copy
  std::packaged_task<int()> p1;
  std::packaged_task<int()> p2(p1); // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/recursive_timed_mutex/cons/copy_neg.cc
-------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
```

```
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <mutex>

void test01()
{
  // assign
  typedef std::recursive_timed_mutex mutex_type;
  mutex_type m1;
  mutex_type m2(m1);            // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/thread/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2009-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <thread>

void test01()
{
  // copy
  typedef std::thread test_type;
  test_type t1;
  test_type t2(t1);             // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/condition_variable_any/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
```

```
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <condition_variable>

void test01()
{
  // copy
  std::condition_variable_any c1;
  std::condition_variable_any c2(c1); // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/recursive_mutex/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <mutex>

void test01()
{
  // assign
  typedef std::recursive_mutex mutex_type;
  mutex_type m1;
```

```
  mutex_type m2(m1);            // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/promise/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2009-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <future>

void test01()
{
  // copy
  std::promise<int> p1;
  std::promise<int> p2(p1);     // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/condition_variable/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
```

```
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <condition_variable>

void test01()
{
  // copy
  std::condition_variable c1;
  std::condition_variable c2(c1); // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/mutex/cons/copy_neg.cc
-----------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <mutex>

void test01()
{
  // assign
  typedef std::mutex mutex_type;
  mutex_type m1;
  mutex_type m2(m1);            // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/future/cons/copy_neg.cc
-----------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2009-2017 Free Software Foundation, Inc.
```

```
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <future>

extern std::future<int>& get();

void test01()
{
  // copy
  std::future<int>& p1 = get();
  std::future<int> p2(p1);      // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/shared_timed_mutex/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++14 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <shared_mutex>

void test01()
{
  // assign
```

```
  typedef std::shared_timed_mutex mutex_type;
  mutex_type m1;
  mutex_type m2(m1);            // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/30_threads/shared_future/cons/copy.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-gthreads "" }

// Copyright (C) 2009-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <future>
#include <testsuite_hooks.h>

extern std::future<int>&& get();

void test01()
{
  using std::shared_future;

  shared_future<int> p1 = get();
  shared_future<int> p2(p1);
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/string_view/operations/copy/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/string_view/operations/copy/wchar_t/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/string_view/operations/copy/wchar_t/1.cc
-------------------------------------------------------------------
// { dg-do run { target c++14 } }
```

```
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// basic_string_view::copy

#include <experimental/string_view>
#include <testsuite_hooks.h>

void
test01()
{
  typedef std::experimental::wstring_view::size_type csize_type;
  csize_type csz01;

  const wchar_t str_lit01[] = L"123456789A";
  const std::experimental::wstring_view str01(str_lit01);
  wchar_t buffer[4] = { 0 };

  csize_type len = str01.copy(buffer, sizeof(buffer), 8);
  VERIFY( 2 == len );
  VERIFY( L'9' == buffer[0] );
}

int
main()
{
  test01();

  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/string_view/operations/copy/char/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/string_view/operations/copy/char/1.cc
-------------------------------------------------------------------
// { dg-do run { target c++14 } }

// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
```

```
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// basic_string_view::copy

#include <experimental/string_view>
#include <testsuite_hooks.h>

void
test01()
{
  typedef std::experimental::string_view::size_type csize_type;

  const char str_lit01[] = "123456789A";
  const std::experimental::string_view str01(str_lit01);
  char buffer[4] = { 0 };

  csize_type len = str01.copy(buffer, sizeof(buffer), 8);
  VERIFY( 2 == len );
  VERIFY( '9' == buffer[0] );
}

int
main()
{
  test01();

  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/filesystem/path/assign/copy.cc
-------------------------------------------------------------------
// { dg-options "-lstdc++fs" }
// { dg-do run { target c++11 } }
// { dg-require-filesystem-ts "" }

// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
```

```
// <http://www.gnu.org/licenses/>.

#include <experimental/filesystem>
#include <testsuite_fs.h>

using std::experimental::filesystem::path;
using __gnu_test::compare_paths;

void
test01()
{
  for (const path& p : __gnu_test::test_paths)
  {
    path copy;
    copy = p;
    __gnu_test::compare_paths(p, copy);
  }
}

void
test02()
{
  for (const path& p : __gnu_test::test_paths)
  {
    path copy = p;
    path move;
    move = std::move(copy);
    __gnu_test::compare_paths(p, move);
  }
}

int
main()
{
  test01();
  test02();
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/filesystem/path/construct/copy.cc
-------------------------------------------------------------------
// { dg-options "-lstdc++fs" }
// { dg-do run { target c++11 } }
// { dg-require-filesystem-ts "" }

// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
```

```
// <http://www.gnu.org/licenses/>.

// 8.4.1 path constructors [path.construct]

#include <experimental/filesystem>
#include <testsuite_fs.h>

using std::experimental::filesystem::path;

void
test01()
{
  for (const path& p : __gnu_test::test_paths)
  {
    path copy = p;
    __gnu_test::compare_paths(p, copy);
  }
}

void
test02()
{
  for (const path& p : __gnu_test::test_paths)
  {
    path copy = p;
    path move = std::move(copy);
    __gnu_test::compare_paths(p, move);
  }
}

int
main()
{
  test01();
  test02();
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/filesystem/operations/copy.cc
-------------------------------------------------------------------
// { dg-options "-lstdc++fs" }
// { dg-do run { target c++11 } }
// { dg-require-filesystem-ts "" }

// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.
```

```
// 15.3 Copy [fs.op.copy]

#include <experimental/filesystem>
#include <testsuite_fs.h>
#include <testsuite_hooks.h>

namespace fs = std::experimental::filesystem;

// Test error conditions.
void
test01()
{
  auto p = __gnu_test::nonexistent_path();
  std::error_code ec;

  VERIFY( !fs::exists(p) );
  fs::copy(p, ".", fs::copy_options::none, ec);
  VERIFY( ec );

  ec.clear();
  fs::copy(".", ".", fs::copy_options::none, ec);
  VERIFY( ec );

  __gnu_test::scoped_file f(p);
  VERIFY( fs::is_directory(".") );
  VERIFY( fs::is_regular_file(p) );
  ec.clear();
  fs::copy(".", p, fs::copy_options::none, ec);
  VERIFY( ec );

  auto to = __gnu_test::nonexistent_path();
  ec.clear();
  auto opts = fs::copy_options::create_symlinks;
  fs::copy("/", to, opts, ec);
  VERIFY( ec == std::make_error_code(std::errc::is_a_directory) );
  VERIFY( !exists(to) );

  ec.clear();
  opts != fs::copy_options::recursive;
  fs::copy("/", to, opts, ec);
  VERIFY( ec == std::make_error_code(std::errc::is_a_directory) );
  VERIFY( !exists(to) );
}

// Test is_symlink(f) case.
void
test02()
{
  auto from = __gnu_test::nonexistent_path();
  auto to = __gnu_test::nonexistent_path();
  std::error_code ec, bad = std::make_error_code(std::errc::invalid_argument);

  ec = bad;
  fs::create_symlink(".", from, ec);
  VERIFY( !ec );
  VERIFY( fs::exists(from) );

  ec = bad;
```

```
  fs::copy(from, to, fs::copy_options::skip_symlinks, ec);
  VERIFY( !ec );
  VERIFY( !fs::exists(to) );

  ec = bad;
  fs::copy(from, to, fs::copy_options::skip_symlinks, ec);
  VERIFY( !ec );
  VERIFY( !fs::exists(to) );

  ec = bad;
  fs::copy(from, to,
           fs::copy_options::skip_symlinks|fs::copy_options::copy_symlinks,
           ec);
  VERIFY( !ec );
  VERIFY( !fs::exists(to) );

  ec = bad;
  fs::copy(from, to, fs::copy_options::copy_symlinks, ec);
  VERIFY( !ec );
  VERIFY( fs::exists(to) );
  VERIFY( is_symlink(to) );

  fs::copy(from, to, fs::copy_options::copy_symlinks, ec);
  VERIFY( ec );

  remove(from, ec);
  remove(to, ec);
}

// Test is_regular_file(f) case.
void
test03()
{
  auto from = __gnu_test::nonexistent_path();
  auto to = __gnu_test::nonexistent_path();

  // test empty file
  std::ofstream{from.native()};
  VERIFY( fs::exists(from) );
  VERIFY( fs::file_size(from) == 0 );
  fs::copy(from, to);
  VERIFY( fs::exists(to) );
  VERIFY( fs::file_size(to) == 0 );

  remove(to);
  VERIFY( !fs::exists(to) );
  std::ofstream{from.native()} << "Hello, filesystem!";
  VERIFY( fs::file_size(from) != 0 );
  fs::copy(from, to);
  VERIFY( fs::exists(to) );
  VERIFY( fs::file_size(to) == fs::file_size(from) );

  remove(from);
  remove(to);
}

// Test is_directory(f) case.
void
test04()
```

```
{
  auto from = __gnu_test::nonexistent_path();
  auto to = __gnu_test::nonexistent_path();
  std::error_code ec;

  create_directories(from/"a/b/c");

  {
    __gnu_test::scoped_file f(to);
    copy(from, to, ec);
    VERIFY( ec );
  }

  __gnu_test::scoped_file f1(from/"a/f1");
  std::ofstream{f1.path} << "file one";
  __gnu_test::scoped_file f2(from/"a/b/f2");
  std::ofstream{f2.path} << "file two";

  copy(from, to, ec);
  VERIFY( !ec );
  VERIFY( exists(to) && is_empty(to) );
  remove(to);

  copy(from, to, fs::copy_options::recursive, ec);
  VERIFY( !ec );
  VERIFY( exists(to) && !is_empty(to) );
  VERIFY( is_regular_file(to/"a/f1") && !is_empty(to/"a/f1") );
  VERIFY( file_size(from/"a/f1") == file_size(to/"a/f1") );
  VERIFY( is_regular_file(to/"a/b/f2") && !is_empty(to/"a/b/f2") );
  VERIFY( file_size(from/"a/b/f2") == file_size(to/"a/b/f2") );
  VERIFY( is_directory(to/"a/b/c") && is_empty(to/"a/b/c") );

  f1.path.clear();
  f2.path.clear();
  remove_all(from, ec);
  remove_all(to, ec);
}

// Test no-op cases.
void
test05()
{
  auto to = __gnu_test::nonexistent_path();
  std::error_code ec = std::make_error_code(std::errc::invalid_argument);

  fs::copy("/", to, fs::copy_options::copy_symlinks, ec);
  VERIFY( !ec );  // Previous value should be cleared (LWG 2683)
}

int
main()
{
  test01();
  test02();
  test03();
  test04();
  test05();
}
-----------------------------------------------------------------
```

```
gcc/libstdc++-v3/testsuite/experimental/filesystem/operations/copy_file.cc
--------------------------------------------------------------------
// Copyright (C) 2016-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-options "-lstdc++fs" }
// { dg-do run { target c++11 } }
// { dg-require-filesystem-ts "" }

// 15.4 Copy [fs.op.copy_file]

#include <experimental/filesystem>
#include <fstream>
#include <testsuite_fs.h>
#include <testsuite_hooks.h>

void
test01()
{
  using std::experimental::filesystem::copy_options;
  std::error_code ec;

  auto from = __gnu_test::nonexistent_path();
  auto to = __gnu_test::nonexistent_path();

  // test non-existent file
  bool b = copy_file(from, to, ec);
  VERIFY( !b );
  VERIFY( ec );
  VERIFY( !exists(to) );

  // test empty file
  std::ofstream{from.native()};
  VERIFY( exists(from) );
  VERIFY( file_size(from) == 0 );

  b = copy_file(from, to);
  VERIFY( b );
  VERIFY( exists(to) );
  VERIFY( file_size(to) == 0 );
  remove(to);
  VERIFY( !exists(to) );
  b = copy_file(from, to, copy_options::none, ec);
  VERIFY( b );
  VERIFY( !ec );
```

```
  VERIFY( exists(to) );
  VERIFY( file_size(to) == 0 );

  std::ofstream{from.native()} << "Hello, filesystem!";
  VERIFY( file_size(from) != 0 );
  remove(to);
  VERIFY( !exists(to) );
  b = copy_file(from, to);
  VERIFY( b );
  VERIFY( exists(to) );
  VERIFY( file_size(to) == file_size(from) );
  remove(to);
  VERIFY( !exists(to) );
  b = copy_file(from, to);
  VERIFY( b );
  VERIFY( !ec );
  VERIFY( exists(to) );
  VERIFY( file_size(to) == file_size(from) );

  remove(from);
  remove(to);
}

int
main()
{
  test01();
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/memory/shared_ptr/cons/copy_ctor.cc
-------------------------------------------------------------------
// { dg-do run { target c++14 } }

// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 8.2.1 Class template shared_ptr [memory.smartptr.shared]

#include <experimental/memory>
#include <testsuite_hooks.h>

struct A
{
  A() { ++ctor_count; }
  virtual ~A() { ++dtor_count; }
```

```
  static long ctor_count;
  static long dtor_count;
};
long A::ctor_count = 0;
long A::dtor_count = 0;

struct B : A
{
  B() { ++ctor_count; }
  virtual ~B() { ++dtor_count; }
  static long ctor_count;
  static long dtor_count;
};
long B::ctor_count = 0;
long B::dtor_count = 0;

void deleter(A* p) { delete [] p; }

struct reset_count_struct
{
  ~reset_count_struct()
    {
      A::ctor_count = 0;
      A::dtor_count = 0;
      B::ctor_count = 0;
      B::dtor_count = 0;
    }
};

// 8.2.1.1 shared_ptr constructors [memory.smartptr.shared.const]

// Copy construction

int
test01()
{
  reset_count_struct __attribute__((unused)) reset;

  std::experimental::shared_ptr<A[5]> a1;
  std::experimental::shared_ptr<A[5]> a2(a1);
  VERIFY( a2.use_count() == 0 );
  VERIFY( A::ctor_count == 0 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test02()
{
  reset_count_struct __attribute__((unused)) reset;

  std::experimental::shared_ptr<A[5]> a1(new A[5]);
  std::experimental::shared_ptr<A[5]> a2(a1);
  VERIFY( a2.use_count() == 2 );
  VERIFY( A::ctor_count == 5 );
  VERIFY( A::dtor_count == 0 );
```

```
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test03()
{
  reset_count_struct __attribute__((unused)) reset;

  std::experimental::shared_ptr<A[5]> a1(new A[5], &deleter);
  std::experimental::shared_ptr<A[5]> a2(a1);
  VERIFY( a2.use_count() == 2 );
  VERIFY( A::ctor_count == 5 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test04()
{
  reset_count_struct __attribute__((unused)) reset;

  std::experimental::shared_ptr<A[5]> a1(std::experimental::shared_ptr<A[5]>
                                         (new A[5]));
  VERIFY( a1.use_count() == 1 );
  VERIFY( A::ctor_count == 5 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test05()
{
  reset_count_struct __attribute__((unused)) reset;

  std::experimental::shared_ptr<A[5]> a1(new A[5]);
  std::experimental::shared_ptr<A[]> a2(a1);

  VERIFY( a2.use_count() == 2 );
  VERIFY( a2.get() == a1.get() );
  VERIFY( A::ctor_count == 5 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test06()
{
```

```
  reset_count_struct __attribute__((unused)) reset;

  std::experimental::shared_ptr<B> a1(new B);
  std::experimental::shared_ptr<A> a2(a1);

  VERIFY( a2.use_count() == 2 );
  VERIFY( a2.get() == a1.get() );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 1 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
main()
{
  test01();
  test02();
  test03();
  test04();
  test05();
  test06();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/memory/shared_ptr/cons/copy_ctor_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++14 } }

// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 8.2.1 Class template shared_ptr [memory.smartptr.shared]

#include <experimental/memory>

struct A { virtual ~A() { } };
struct B : A { };


// 8.2.1.1 shared_ptr constructors [memory.smartptr.shared.const]

// Copy construction
```

```
void
test01()
{
  std::experimental::shared_ptr<A[3]> a;
  a = std::experimental::shared_ptr<B[3]> (new B[3]); // { dg-error "no match " }
}

void
test02()
{
  std::experimental::shared_ptr<A[]> a(new A[3]);
  std::experimental::shared_ptr<A[2]> spa(a); // { dg-error "no matching" }
}

int
main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/propagate_const/assignment/copy.cc
-------------------------------------------------------------------
// { dg-do compile { target c++14 } }

// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <experimental/propagate_const>

using std::experimental::propagate_const;

int main()
{
  int dummy;
  propagate_const<int*> test1;
  propagate_const<int*> test2;
  test2 = test1; // { dg-error "deleted" }
  test2 = &dummy;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/propagate_const/cons/copy.cc
-------------------------------------------------------------------
```

```
// { dg-do compile { target c++14 } }

// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <experimental/propagate_const>

using std::experimental::propagate_const;

int main()
{
  propagate_const<int*> test1;
  propagate_const<int*> test2{test1}; // { dg-error "deleted" }
  propagate_const<int*> test3 = test1; // { dg-error "deleted" }
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/experimental/optional/cons/copy.cc
-------------------------------------------------------------------
// { dg-do run { target c++14 } }

// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <experimental/optional>
#include <testsuite_hooks.h>

struct tracker
{
  tracker(int value) : value(value) { ++count; }
  ~tracker() { --count; }
```

```
  tracker(tracker const& other) : value(other.value) { ++count; }
  tracker(tracker&& other) : value(other.value)
  {
    other.value = -1;
    ++count;
  }

  tracker& operator=(tracker const&) = default;
  tracker& operator=(tracker&&) = default;

  int value;

  static int count;
};

int tracker::count = 0;

struct exception { };

struct throwing_copy
{
  throwing_copy() = default;
  throwing_copy(throwing_copy const&) { throw exception {}; }
};

int main()
{
  // [20.5.4.1] Constructors

  {
    std::experimental::optional<long> o;
    auto copy = o;
    VERIFY( !copy );
    VERIFY( !o );
  }

  {
    const long val = 0x1234ABCD;
    std::experimental::optional<long> o { std::experimental::in_place, val};
    auto copy = o;
    VERIFY( copy );
    VERIFY( *copy == val );
    VERIFY( o && o == val );
  }

  {
    std::experimental::optional<tracker> o;
    auto copy = o;
    VERIFY( !copy );
    VERIFY( tracker::count == 0 );
    VERIFY( !o );
  }

  {
    std::experimental::optional<tracker> o { std::experimental::in_place, 333 };
    auto copy = o;
    VERIFY( copy );
    VERIFY( copy->value == 333 );
    VERIFY( tracker::count == 2 );
```

```
    VERIFY( o && o->value == 333 );
  }

  enum outcome { nothrow, caught, bad_catch };

  {
    outcome result = nothrow;
    std::experimental::optional<throwing_copy> o;

    try
    {
      auto copy = o;
    }
    catch(exception const&)
    { result = caught; }
    catch(...)
    { result = bad_catch; }

    VERIFY( result == nothrow );
  }

  {
    outcome result = nothrow;
    std::experimental::optional<throwing_copy> o { std::experimental::in_place };

    try
    {
      auto copy = o;
    }
    catch(exception const&)
    { result = caught; }
    catch(...)
    { result = bad_catch; }

    VERIFY( result == caught );
  }

  VERIFY( tracker::count == 0 );
}
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string_view/operations/copy/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string_view/operations/copy/wchar_t/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string_view/operations/copy/wchar_t/1.cc
------------------------------------------------------------------
// { dg-options "-std=gnu++17" }

// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
```

```
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// basic_string_view::copy

#include <string_view>
#include <testsuite_hooks.h>

void
test01()
{
  typedef std::wstring_view::size_type csize_type;
  csize_type csz01;

  const wchar_t str_lit01[] = L"123456789A";
  const std::wstring_view str01(str_lit01);
  wchar_t buffer[4] = { 0 };

  csize_type len = str01.copy(buffer, sizeof(buffer), 8);
  VERIFY( 2 == len );
  VERIFY( L'9' == buffer[0] );
}

int
main()
{
  test01();

  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string_view/operations/copy/char/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string_view/operations/copy/char/1.cc
-------------------------------------------------------------------
// { dg-options "-std=gnu++17" }

// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.
```

```
// basic_string_view::copy

#include <string_view>
#include <testsuite_hooks.h>

void
test01()
{
  typedef std::string_view::size_type csize_type;

  const char str_lit01[] = "123456789A";
  const std::string_view str01(str_lit01);
  char buffer[4] = { 0 };

  csize_type len = str01.copy(buffer, sizeof(buffer), 8);
  VERIFY( 2 == len );
  VERIFY( '9' == buffer[0] );
}

int
main()
{
  test01();

  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string/allocator/wchar_t/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }
// COW strings don't support C++11 allocators:
// { dg-require-effective-target cxx11-abi }

#include <string>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>
#include <ext/throw_allocator.h>

using C = wchar_t;
const C c = L'a';
using traits = std::char_traits<C>;
```

```
using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<C, false> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(alloc_type(2));
  v2.assign(1, c);
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());

  v1.assign(1, c);
  test_type v3(alloc_type(3));
  v3.assign(100, c);
  v3 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(3 == v3.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v4(alloc_type(4));
  v4.assign(1, c);
  v4 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(4 == v4.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v5(alloc_type(5));
  v5.assign(100, c);
  v5 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(5 == v5.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<C, true> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(alloc_type(2));
  v2.assign(1, c);
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());

  v1.assign(1, c);
  test_type v3(alloc_type(3));
  v3.assign(100, c);
  v3 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v3.get_allocator().get_personality());

  v1.assign(100, c);
```

```
  test_type v4(alloc_type(4));
  v4.assign(1, c);
  v4 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v4.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v5(alloc_type(5));
  v5.assign(100, c);
  v5 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v5.get_allocator().get_personality());
}

void test03()
{
  // PR libstdc++/79254
  using throw_alloc = __gnu_cxx::throw_allocator_limit<C>;
  typedef propagating_allocator<C, true, throw_alloc> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  alloc_type a1(1), a2(2);
  throw_alloc::set_limit(2); // Throw on third allocation (during assignment).
  const C* s1 = L"a string that is longer than a small string";
  const C* s2 = L"another string that is longer than a small string";
  test_type v1(s1, a1);
  test_type v2(s2, a2);
  bool caught = false;
  try {
    v1 = v2;
  } catch (__gnu_cxx::forced_error&) {
    caught = true;
  }
  VERIFY( caught );
  VERIFY( v1 == s1 );
  VERIFY( v1.get_allocator() == a1 );

  throw_alloc::set_limit(1); // Allow one more allocation (and no more).
  test_type v3(s1, a1);
  // No allocation when allocators are equal and capacity is sufficient:
  VERIFY( v1.capacity() >= v3.size() );
  v1 = v3;
  // No allocation when the contents fit in the small-string buffer:
  v2 = L"sso";
  v1 = v2;
  VERIFY( v1.get_allocator() == a2 );
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string/allocator/wchar_t/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
```

```
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }
// COW strings don't support C++11 allocators:
// { dg-require-effective-target cxx11-abi }

#include <string>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

using C = wchar_t;
const C c = L'a';
using traits = std::char_traits<C>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<C, false> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v3(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v3.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<C, true> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v3(v1);
```

```
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v3.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<C, true> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v3(v1, alloc_type(3));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(3 == v3.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string/allocator/char/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }
// COW strings don't support C++11 allocators:
// { dg-require-effective-target cxx11-abi }

#include <string>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>
#include <ext/throw_allocator.h>

using C = char;
const C c = 'a';
```

```
using traits = std::char_traits<C>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<C, false> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(alloc_type(2));
  v2.assign(1, c);
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());

  v1.assign(1, c);
  test_type v3(alloc_type(3));
  v3.assign(100, c);
  v3 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(3 == v3.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v4(alloc_type(4));
  v4.assign(1, c);
  v4 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(4 == v4.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v5(alloc_type(5));
  v5.assign(100, c);
  v5 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(5 == v5.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<C, true> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(alloc_type(2));
  v2.assign(1, c);
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());

  v1.assign(1, c);
  test_type v3(alloc_type(3));
  v3.assign(100, c);
  v3 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v3.get_allocator().get_personality());
```

```
  v1.assign(100, c);
  test_type v4(alloc_type(4));
  v4.assign(1, c);
  v4 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v4.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v5(alloc_type(5));
  v5.assign(100, c);
  v5 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v5.get_allocator().get_personality());
}

void test03()
{
  // PR libstdc++/79254
  using throw_alloc = __gnu_cxx::throw_allocator_limit<C>;
  typedef propagating_allocator<C, true, throw_alloc> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  alloc_type a1(1), a2(2);
  throw_alloc::set_limit(2); // Throw on third allocation (during assignment).
  const C* s1 = "a string that is longer than a small string";
  const C* s2 = "another string that is longer than a small string";
  test_type v1(s1, a1);
  test_type v2(s2, a2);
  bool caught = false;
  try {
    v1 = v2;
  } catch (__gnu_cxx::forced_error&) {
    caught = true;
  }
  VERIFY( caught );
  VERIFY( v1 == s1 );
  VERIFY( v1.get_allocator() == a1 );

  throw_alloc::set_limit(1); // Allow one more allocation (and no more).
  test_type v3(s1, a1);
  // No allocation when allocators are equal and capacity is sufficient:
  VERIFY( v1.capacity() >= v3.size() );
  v1 = v3;
  // No allocation when the contents fit in the small-string buffer:
  v2 = "sso";
  v1 = v2;
  VERIFY( v1.get_allocator() == a2 );
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/21_strings/basic_string/allocator/char/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
```

```
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }
// COW strings don't support C++11 allocators:
// { dg-require-effective-target cxx11-abi }

#include <string>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

using C = char;
const C c = 'a';
using traits = std::char_traits<C>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<C, false> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v3(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v3.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<C, true> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());

  v1.assign(100, c);
```

```
  test_type v3(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v3.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<C, true> alloc_type;
  typedef std::basic_string<C, traits, alloc_type> test_type;
  test_type v1(alloc_type(1));

  v1.assign(1, c);
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());

  v1.assign(100, c);
  test_type v3(v1, alloc_type(3));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(3 == v3.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/performance/21_strings/copy_cons_and_dest.cc
-------------------------------------------------------------------
// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <string>
#include <testsuite_performance.h>

void benchmark(long len)
{
  using namespace std;
  using namespace __gnu_test;

  time_counter time;
```

```
  resource_counter resource;

  start_counters(time, resource);
  string a("1");
  for (long i = 0; i < len; ++i)
    {
      string ss1(a);
      string ss2(ss1);
      string ss3(ss2);
      string ss4(ss3);
      string ss5(ss4);
    }
  stop_counters(time, resource);

  report_performance(__FILE__, "", time, resource);
  clear_counters(time, resource);
}

int main()
{
  benchmark(1000000);
  benchmark(10000000);
  benchmark(100000000);
  return 0;
}
-----------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/performance/23_containers/copy_construct/
-----------------------------------------------------------------------
-----------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/performance/23_containers/copy_construct/unordered_set.cc
-----------------------------------------------------------------------
// { dg-do run { target c++11 } }
// Copyright (C) 2011-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <unordered_set>
#include <testsuite_performance.h>

int main()
{
  using namespace __gnu_test;

  time_counter time;
  resource_counter resource;
```

```
  std::unordered_set<int> ref;
  for (int i = 0; i != 500000; ++i)
    ref.insert(i);

  start_counters(time, resource);

  for (unsigned i = 0; i < 500; ++i)
    std::unordered_set<int> v(ref);

  stop_counters(time, resource);
  report_performance(__FILE__, "unordered_set<int> copy", time, resource);

  return 0;
}
--------------------------------------------------------------
gcc/libstdc++-v3/testsuite/performance/23_containers/copy_construct/vector_bool.cc
--------------------------------------------------------------
// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <vector>
#include <testsuite_performance.h>

int main()
{
  using namespace __gnu_test;

  time_counter time;
  resource_counter resource;

  start_counters(time, resource);
  const std::vector<bool> ref(100000);

  for (unsigned i = 0; i < 1000000; ++i)
    std::vector<bool> v(ref);
  stop_counters(time, resource);
  report_performance(__FILE__, "", time, resource);

  return 0;
}
--------------------------------------------------------------
gcc/libstdc++-v3/testsuite/performance/25_algorithms/copy_deque_iterators.cc
--------------------------------------------------------------
```

```
// 2009-23-12  Paolo Carlini  <paolo.carlini@oracle.com>
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <deque>
#include <testsuite_performance.h>

int main()
{
  using namespace __gnu_test;

  time_counter time;
  resource_counter resource;

  const std::deque<int> data(3000, 3);

  std::deque<int> d(3000, 1);

  start_counters(time, resource);
  for (int i = 0; i < 1000; ++i)
    for (int j = 0; j < 3000; ++j)
      std::copy(data.begin(), data.begin() + j, d.begin());
  stop_counters(time, resource);
  report_performance(__FILE__, "", time, resource);

  return 0;
}
```

---

gcc/libstdc++-v3/testsuite/performance/25_algorithms/copy_streambuf_iterators.cc

---

```
// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.
```

```
#include <iterator>
#include <sstream>
#include <algorithm>
#include <testsuite_performance.h>

// libstdc++/25482
int main()
{
  using namespace std;
  using namespace __gnu_test;

  typedef istreambuf_iterator<char> in_iterator_type;
  typedef ostreambuf_iterator<char> out_iterator_type;

  time_counter time;
  resource_counter resource;

  const char data[] = "Contrappunto dialettico alla mente";

  // istreambuf iterators -> ostreambuf iterator
  {
    istringstream iss(data);
    in_iterator_type beg(iss);
    in_iterator_type end;

    ostringstream oss;
    out_iterator_type out(oss);

    start_counters(time, resource);
    for (unsigned i = 0; i < 10000000; ++i)
      {
        copy(beg, end, out);
        iss.seekg(0);
        oss.seekp(0);
      }
    stop_counters(time, resource);
    report_performance(__FILE__, "isb iters -> osb iter", time, resource);
    clear_counters(time, resource);
  }

  // char array -> ostreambuf iterator
  {
    const char* beg = data;
    const char* end = data + sizeof(data) - 1;

    ostringstream oss;
    out_iterator_type out(oss);

    start_counters(time, resource);
    for (unsigned i = 0; i < 10000000; ++i)
      {
        copy(beg, end, out);
        oss.seekp(0);
      }
    stop_counters(time, resource);
    report_performance(__FILE__, "pointers  -> osb iter", time, resource);
    clear_counters(time, resource);
```

```
  }

  // istreambuf iterators -> char array
  {
    istringstream iss(data);
    in_iterator_type beg(iss);
    in_iterator_type end;

    char out[sizeof(data)];

    start_counters(time, resource);
    for (unsigned i = 0; i < 10000000; ++i)
      {
        copy(beg, end, out);
        iss.seekg(0);
      }
    stop_counters(time, resource);
    report_performance(__FILE__, "isb iters -> pointer", time, resource);
    clear_counters(time, resource);
  }

  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/performance/25_algorithms/copy_backward_deque_iterators.cc
-------------------------------------------------------------------
// 2009-24-12  Paolo Carlini  <paolo.carlini@oracle.com>
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <deque>
#include <testsuite_performance.h>

int main()
{
  using namespace __gnu_test;

  time_counter time;
  resource_counter resource;

  const std::deque<int> data(3000, 3);

  std::deque<int> d(3000, 1);

  start_counters(time, resource);
  for (int i = 0; i < 1000; ++i)
```

```
    for (int j = 0; j < 3000; ++j)
      std::copy_backward(data.begin(), data.begin() + j, d.end());
  stop_counters(time, resource);
  report_performance(__FILE__, "", time, resource);

  return 0;
}
---------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_set/allocator/copy_assign.cc
---------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_set<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(alloc_type(2));
  v2.insert(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
```

```
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_set<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(alloc_type(2));
  v2.insert(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_set/allocator/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
```

```
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_set<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_set<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_set<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/vector/allocator/copy_assign.cc
-----------------------------------------------------------------
// Copyright (C) 2011-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
```

```
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <vector>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(alloc_type(2));
  v2.push_back(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(alloc_type(2));
  v2.push_back(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/vector/allocator/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2011-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
```

```
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <vector>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
```

```
--------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/vector/bool/allocator/copy_assign.cc
--------------------------------------------------------------
// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <vector>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

using T = bool;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(alloc_type(2));
  v2.push_back(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(alloc_type(2));
  v2.push_back(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
```

```
  test02();
  return 0;
}
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/vector/bool/allocator/copy.cc
-----------------------------------------------------------------
// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <vector>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

using T = bool;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::vector<T, alloc_type> test_type;
```

```
  test_type v1(alloc_type(1));
  v1.push_back(T());
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/deque/allocator/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <deque>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::deque<T, alloc_type> test_type;
  test_type v1(1, alloc_type(1));
  test_type v2(1, alloc_type(2));
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::deque<T, alloc_type> test_type;
```

```
  test_type v1(1, alloc_type(1));
  test_type v2(1, alloc_type(2));
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
---------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/deque/allocator/copy.cc
---------------------------------------------------------------
// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <deque>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::deque<T, alloc_type> test_type;
  test_type v1(1, alloc_type(1));
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::deque<T, alloc_type> test_type;
  test_type v1(1, alloc_type(1));
  test_type v2(v1);
```

```
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::deque<T, alloc_type> test_type;
  test_type v1(1, alloc_type(1));
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-----------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/set/allocator/copy_assign.cc
-----------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::set<T, Cmp, alloc_type> test_type;
```

```
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::set<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  using namespace __gnu_test;

  typedef tracker_allocator<int> alloc_type;
  typedef std::set<int, std::less<int>, alloc_type> test_type;

  tracker_allocator_counter::reset();

  test_type v1 = { 0, 1 };
  test_type v2 = { 2, 3 };

  auto allocs = tracker_allocator_counter::get_allocation_count();
  auto constructs = tracker_allocator_counter::get_construct_count();

  v1 = v2;

  VERIFY( tracker_allocator_counter::get_allocation_count() == allocs );
  VERIFY( tracker_allocator_counter::get_construct_count() == constructs + 2 );
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/set/allocator/copy.cc
-----------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
```

```
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::set<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::set<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::set<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
```

```
{
  test01();
  test02();
  test03();
  return 0;
}
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/forward_list/allocator/copy_assign.cc
------------------------------------------------------------------
// Copyright (C) 2012-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <forward_list>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::forward_list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(alloc_type(2));
  v2.push_front(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::forward_list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(alloc_type(2));
  v2.push_front(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
```

```
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/forward_list/allocator/copy.cc
-------------------------------------------------------------
// Copyright (C) 2012-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <forward_list>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::forward_list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::forward_list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
```

```
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::forward_list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_multiset/allocator/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};
```

```
using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_multiset<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(alloc_type(2));
  v2.insert(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_multiset<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(alloc_type(2));
  v2.insert(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_multiset/allocator/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_set>
#include <testsuite_hooks.h>
```

```
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_multiset<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_multiset<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_multiset<T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.insert(T());
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-----------------------------------------------------------------------
```

gcc/libstdc++-v3/testsuite/23_containers/unordered_multiset/cons/copy.cc
---
```
// { dg-do run { target c++11 } }

// Copyright (C) 2011-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


// NOTE: This makes use of the fact that we know how moveable
// is implemented on set (via swap). If the implementation changed
// this test may begin to fail.

#include <unordered_set>
#include <utility>
#include <testsuite_hooks.h>

int main()
{
  const int nb = 10000;
  std::unordered_multiset<int> ref;
  for (int i = 0; i != nb; ++i)
    {
      ref.insert(i);
      ref.insert(i);
    }

  std::unordered_multiset<int> copy(ref);
  VERIFY( copy.size() == ref.size() );
  VERIFY( std::equal(ref.begin(), ref.end(), copy.begin()) );
  return 0;
}
```
---
gcc/libstdc++-v3/testsuite/23_containers/multiset/allocator/copy_assign.cc
---
```
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
```

```
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::multiset<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::multiset<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  using namespace __gnu_test;

  typedef tracker_allocator<int> alloc_type;
  typedef std::multiset<int, std::less<int>, alloc_type> test_type;

  tracker_allocator_counter::reset();

  test_type v1 = { 0, 0 };
  test_type v2 = { 1, 1 };

  auto allocs = tracker_allocator_counter::get_allocation_count();
```

```
  auto constructs = tracker_allocator_counter::get_construct_count();

  v1 = v2;

  VERIFY( tracker_allocator_counter::get_allocation_count() == allocs );
  VERIFY( tracker_allocator_counter::get_construct_count() == constructs + 2 );
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
```

---

gcc/libstdc++-v3/testsuite/23_containers/multiset/allocator/copy.cc

---

```
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <set>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::multiset<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}
```

```
void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::multiset<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::multiset<T, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_map/allocator/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
```

```
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_map<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(alloc_type(2));
  v2.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_map<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(alloc_type(2));
  v2.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_map/allocator/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
```

```
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_map<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_map<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
```

```
  typedef std::unordered_map<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
```

---

gcc/libstdc++-v3/testsuite/23_containers/list/allocator/copy_assign.cc

---

```
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <list>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(alloc_type(2));
  v2.push_front(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}
```

```
void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(alloc_type(2));
  v2.push_front(T());
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/list/allocator/copy.cc
-----------------------------------------------------------------
// Copyright (C) 2015-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <list>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}
```

```
void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::list<T, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.push_front(T());
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/map/allocator/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }
```

```
using Cmp = std::less<T>;

struct U { };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<std::pair<const T, U>, false> alloc_type;
  typedef std::map<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<std::pair<const T, U>, true> alloc_type;
  typedef std::map<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  using namespace __gnu_test;

  typedef tracker_allocator<std::pair<const int, int>> alloc_type;
  typedef std::map<int, int, std::less<int>, alloc_type> test_type;

  tracker_allocator_counter::reset();

  test_type v1 = { { 0, 0 }, { 1, 1 } };
  test_type v2 = { { 2, 2 }, { 3, 3 } };

  auto allocs = tracker_allocator_counter::get_allocation_count();
  auto constructs = tracker_allocator_counter::get_construct_count();

  v1 = v2;

  VERIFY( tracker_allocator_counter::get_allocation_count() == allocs );
  VERIFY( tracker_allocator_counter::get_construct_count() == constructs + 2 );
}

int main()
{
  test01();
  test02();
  test03();
```

```
  return 0;
}
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/map/allocator/copy.cc
-------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

struct U { };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<std::pair<const T, U>, false> alloc_type;
  typedef std::map<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<std::pair<const T, U>, true> alloc_type;
  typedef std::map<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}
```

```
void test03()
{
  typedef propagating_allocator<std::pair<const T, U>, true> alloc_type;
  typedef std::map<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/multimap/allocator/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

struct U { };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<std::pair<const T, U>, false> alloc_type;
  typedef std::multimap<T, U, Cmp, alloc_type> test_type;
```

```
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<std::pair<const T, U>, true> alloc_type;
  typedef std::multimap<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(alloc_type(2));
  v2 = { test_type::value_type{} };
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  using namespace __gnu_test;

  typedef tracker_allocator<std::pair<const int, int>> alloc_type;
  typedef std::multimap<int, int, std::less<int>, alloc_type> test_type;

  tracker_allocator_counter::reset();

  test_type v1 = { { 1, 1 }, { 1, 1 } };
  test_type v2 = { { 2, 2 }, { 2, 2 } };

  auto allocs = tracker_allocator_counter::get_allocation_count();
  auto constructs = tracker_allocator_counter::get_construct_count();

  v1 = v2;

  VERIFY( tracker_allocator_counter::get_allocation_count() == allocs );
  VERIFY( tracker_allocator_counter::get_construct_count() == constructs + 2 );
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/multimap/allocator/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
```

```
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

bool operator<(T l, T r) { return l.i < r.i; }

using Cmp = std::less<T>;

struct U { };

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<std::pair<const T, U>, false> alloc_type;
  typedef std::multimap<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<std::pair<const T, U>, true> alloc_type;
  typedef std::multimap<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<std::pair<const T, U>, true> alloc_type;
  typedef std::multimap<T, U, Cmp, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1 = { test_type::value_type{} };
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}
```

```
int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_multimap/allocator/copy_assign.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_multimap<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(alloc_type(2));
  v2.emplace(std::piecewise_construct,
```

```
            std::make_tuple(T()), std::make_tuple(T()));
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_multimap<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
            std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(alloc_type(2));
  v2.emplace(std::piecewise_construct,
            std::make_tuple(T()), std::make_tuple(T()));
  v2 = v1;
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/23_containers/unordered_multimap/allocator/copy.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// { dg-do run { target c++11 } }

#include <unordered_map>
#include <testsuite_hooks.h>
#include <testsuite_allocator.h>

struct T { int i; };

struct hash
{
  std::size_t operator()(const T t) const noexcept
  { return t.i; }
```

```
};

struct equal_to
{
  bool operator()(const T& lhs, const T& rhs) const noexcept
  { return lhs.i == rhs.i; }
};

using __gnu_test::propagating_allocator;

void test01()
{
  typedef propagating_allocator<T, false> alloc_type;
  typedef std::unordered_multimap<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(0 == v2.get_allocator().get_personality());
}

void test02()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_multimap<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(v1);
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(1 == v2.get_allocator().get_personality());
}

void test03()
{
  typedef propagating_allocator<T, true> alloc_type;
  typedef std::unordered_multimap<T, T, hash, equal_to, alloc_type> test_type;
  test_type v1(alloc_type(1));
  v1.emplace(std::piecewise_construct,
             std::make_tuple(T()), std::make_tuple(T()));
  test_type v2(v1, alloc_type(2));
  VERIFY(1 == v1.get_allocator().get_personality());
  VERIFY(2 == v2.get_allocator().get_personality());
}

int main()
{
  test01();
  test02();
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/ext/random/simd_fast_mersenne_twister_engine/cons/copy.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
// { dg-require-little-endian "" }
```

```
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
// 2012-08-28  Ulrich Drepper  <drepper@gmail.com>, adapted for SFMT
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <ext/random>

void
test01()
{
  typedef uint32_t value_type;

  __gnu_cxx::simd_fast_mersenne_twister_engine<value_type, 607, 2,
                                               15, 3, 13, 3,
                                               0xfdff37ffU, 0xef7f3f7dU,
                                               0xff777b7dU, 0x7ff7fb2fU,
                                               0x00000001U, 0x00000000U,
                                               0x00000000U, 0x5986f054U> e(1);

  const auto f(e);
  auto g(f);
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/29_atomics/atomic/cons/copy_list.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
```

```
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <atomic>
#include <testsuite_common_types.h>

int main()
{
  __gnu_test::copy_list_initializable test;
  __gnu_cxx::typelist::apply_generator(test, __gnu_test::atomics_tl(),
                                       __gnu_test::integral_types::type());
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/29_atomics/atomic/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <atomic>
#include <testsuite_common_types.h>

int main()
{
  __gnu_test::copy_constructible test;
  __gnu_cxx::typelist::apply_generator(test, __gnu_test::atomics_tl());
  return 0;
}

// { dg-error "deleted" "" { target *-*-* } 659 }
// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/29_atomics/atomic_integral/cons/copy_list.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
```

```
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <atomic>
#include <testsuite_common_types.h>

int main()
{
  __gnu_test::copy_list_initializable test;
  __gnu_cxx::typelist::apply_generator(test,
                                       __gnu_test::atomic_integrals::type(),
                                       __gnu_test::integral_types::type());
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/29_atomics/atomic_integral/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <atomic>
#include <testsuite_common_types.h>

int main()
{
  __gnu_test::copy_constructible test;
  __gnu_cxx::typelist::apply_generator(test,
                                       __gnu_test::atomic_integrals::type());
  return 0;
}
```

```
// { dg-error "deleted" "" { target *-*-* } 659 }
// { dg-prune-output "include" }
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/29_atomics/atomic_flag/cons/copy_neg.cc
-----------------------------------------------------------------
// { dg-do compile { target c++11 } }

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <atomic>

void test01()
{
  // Copy.
  typedef std::atomic_flag test_type;
  test_type t1;
  test_type t2(t1);             // { dg-error "deleted" }
}

// { dg-prune-output "include" }
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/27_io/basic_ios/copyfmt/
-----------------------------------------------------------------
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/27_io/basic_ios/copyfmt/char/
-----------------------------------------------------------------
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/27_io/basic_ios/copyfmt/char/2.cc
-----------------------------------------------------------------
// { dg-require-namedlocale "de_DE.ISO8859-15" }

// 1999-09-20 bkoz

// Copyright (C) 1999-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
```

```
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


// 27.4.4.2 basic_ios member functions

// NB: Don't include any other headers in this file.
#include <ios>
#include <testsuite_hooks.h>

// copyfmt and locales.
void test03()
{
  using namespace std;

  typedef std::ios_base::fmtflags fmtflags;
  typedef std::ios_base::iostate iostate;
  locale loc_c = locale::classic();
  locale loc_de = locale(ISO_8859(15,de_DE));
  std::ios ios_01(0);
  std::ios ios_02(0);
  ios_01.imbue(loc_c);
  ios_02.imbue(loc_de);
  ios_02.setstate(ios_base::badbit);
  VERIFY( loc_c == ios_01.getloc() );
  VERIFY( loc_de == ios_02.getloc() );

  iostate ios1 = ios_01.rdstate();
  iostate ios2 = ios_02.rdstate();
  streambuf* sb1 = ios_01.rdbuf();
  streambuf* sb2 = ios_02.rdbuf();
  ios_01.copyfmt(ios_02);

  VERIFY( loc_de == ios_01.getloc() );
  VERIFY( ios_01.getloc() == ios_02.getloc() );
  VERIFY( ios1 == ios_01.rdstate() );
  VERIFY( ios2 == ios_02.rdstate() );
  VERIFY( sb1 == ios_01.rdbuf() );
  VERIFY( sb2 == ios_02.rdbuf() );
}

int main()
{
  test03();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/27_io/basic_ios/copyfmt/char/1.cc
-------------------------------------------------------------------
// 1999-09-20 bkoz

// Copyright (C) 1999-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
```

```
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 27.4.4.2 basic_ios member functions

// NB: Don't include any other headers in this file.
#include <ios>
#include <testsuite_hooks.h>

// 27.4.4.3 basic_ios iostate flags function
void test02()
{
  typedef std::ios_base::fmtflags fmtflags;
  typedef std::ios_base::iostate iostate;
  using std::ios_base;

  // basic_ios& copyfmt(const basic_ios& rhs)
  {
    std::ios ios_01(0);
    std::ios ios_02(0);
    ios_01.exceptions(std::ios_base::eofbit);
    ios_02.exceptions(std::ios_base::eofbit);

    try {
      ios_01.copyfmt(ios_02);
    }
    catch(...) {
      VERIFY( false );
    }
  }

  {
    // The library throws the new definition of std::ios::failure
#if _GLIBCXX_USE_CXX11_ABI
    typedef std::ios_base::failure exception_type;
#else
    typedef std::exception exception_type;
#endif

    std::ios ios_01(0);
    std::ios ios_02(0);
    ios_01.clear(std::ios_base::eofbit);
    ios_02.exceptions(std::ios_base::eofbit);

    try {
      ios_01.copyfmt(ios_02);
      VERIFY( false );
    }
    catch(exception_type&) {
      VERIFY( true );
```

```
    }
    catch(...) {
      VERIFY( false );
    }
  }
}

int main()
{
  test02();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/27_io/basic_filebuf/cons/char/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// Copyright (C) 2014-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <fstream>

void test()
{
  std::filebuf f;
  std::filebuf ff(f); // { dg-error "deleted function" }
  ff = f; // { dg-error "deleted function" }
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/27_io/ios_base/cons/copy_neg.cc
-------------------------------------------------------------------
// { dg-do compile }

// Copyright (C) 2003-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
```

```
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <ios>

// Library defect report
//50.  Copy constructor and assignment operator of ios_base
struct test_base : public std::ios_base // { dg-error "within this context|deleted" }
{ };

void test02()
{
  // copy ctor
  test_base io1;
  test_base io2 = io1; // { dg-error "synthesized|deleted" }
}

// { dg-prune-output "include" }
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/28_regex/basic_regex/ctors/copy_char.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }

// 2010-07-07  Stephen M. Webb  <stephen.webb@bregmasoft.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// [28.8.2](11) class template basic_regex constructors

#include <regex>
#include <testsuite_hooks.h>

// Tests copy constructor of the basic_regex class.
void test01()
{
  typedef std::basic_regex<char> test_type;

  test_type src_re("aaba");

  test_type target_re(src_re);

        VERIFY( target_re.flags() == src_re.flags() );
```

```
        VERIFY( target_re.mark_count() == src_re.mark_count() );
}

int
main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_if/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_if/requirements/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_if/requirements/explicit_instantiation/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_if/requirements/explicit_instantiation/2.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// 2008-06-24  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <functional>
#include <testsuite_api.h>

namespace std
{
  using __gnu_test::NonDefaultConstructible;

  typedef NonDefaultConstructible               value_type;
  typedef value_type*           iterator_type;
  typedef std::pointer_to_unary_function<value_type, bool> predicate_type;

  template iterator_type copy_if(iterator_type, iterator_type,
                                 iterator_type, predicate_type);
}
-------------------------------------------------------------------
```

gcc/libstdc++-v3/testsuite/25_algorithms/copy_if/requirements/explicit_instantiation/pod.cc
---
```
// { dg-do compile { target c++11 } }

// 2008-06-24  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_character.h>

namespace std
{
  using __gnu_test::pod_int;

  typedef pod_int               value_type;
  typedef value_type*           iterator_type;
  typedef std::pointer_to_unary_function<value_type, bool> predicate_type;

  template iterator_type copy_if(iterator_type, iterator_type,
                                 iterator_type, predicate_type);
}
```
---
gcc/libstdc++-v3/testsuite/25_algorithms/copy_if/check_type.cc
---
```
// 2008-06-25  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.
```

```
// { dg-do compile { target c++11 } }

#include <algorithm>
#include <testsuite_iterators.h>

using __gnu_test::input_iterator_wrapper;
using __gnu_test::output_iterator_wrapper;

struct X { };

struct Z
{
  Z&
  operator=(const X&)
  { return *this; }
};

bool
pred_function(const X&)
{ return true; }

struct pred_obj
{
  bool
  operator()(const X&)
  { return true; }
};

output_iterator_wrapper<Z>
test1(input_iterator_wrapper<X>& begin,
      input_iterator_wrapper<X>& end,
      output_iterator_wrapper<Z>& output)
{ return std::copy_if(begin, end, output, pred_function); }

output_iterator_wrapper<Z>
test2(input_iterator_wrapper<X>& begin,
      input_iterator_wrapper<X>& end,
      output_iterator_wrapper<Z>& output)
{ return std::copy_if(begin, end, output, pred_obj()); }
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/requirements/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/requirements/explicit_instantiation/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/requirements/explicit_instantiation/2.cc
------------------------------------------------------------------
// { dg-do compile }

// 2007-09-20 Benjamin Kosnik <bkoz@redhat.com>

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
```

```
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_api.h>

namespace std
{
  using __gnu_test::NonDefaultConstructible;

  typedef NonDefaultConstructible               value_type;
  typedef value_type*           iterator_type;
  typedef unsigned short        size_type;

  template iterator_type copy_backward(iterator_type, iterator_type,
                                       iterator_type);
}
-----------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/requirements/explicit_instantiation/pod.cc
-----------------------------------------------------------------------
// { dg-do compile }

// 2007-09-20 Benjamin Kosnik <bkoz@redhat.com>

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_character.h>

namespace std
{
```

```
  using __gnu_test::pod_int;

  typedef pod_int               value_type;
  typedef value_type*           iterator_type;
  typedef unsigned short        size_type;

  template iterator_type copy_backward(iterator_type, iterator_type,
                                       iterator_type);
}
----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/deque_iterators/
----------------------------------------------------------------
----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/deque_iterators/1.cc
----------------------------------------------------------------
// 2009-12-24  Paolo Carlini  <paolo.carlini@oracle.com>
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <deque>
#include <testsuite_hooks.h>

void test01()
{
  using namespace std;

  deque<long> data(200);
  for (unsigned i = 0; i < data.size(); ++i)
    data[i] = i;

  const deque<long> data_1(data.size(), -1);

  for (unsigned i = 0; i < data.size(); i += 2)
    for (unsigned j = i; j <= data.size(); j += 3)
      for (unsigned k = 0; k + (j - i) <= data.size(); k += 5)
        {
          deque<long> d(data.size(), -1);
          copy_backward(data.begin() + i, data.begin() + j,
                        d.begin() + k + (j - i));

          VERIFY( equal(data.begin() + i, data.begin() + j,
                        d.begin() + k) );
          VERIFY( equal(d.begin(), d.begin() + k, data_1.begin()) );
          VERIFY( equal(d.begin() + k + (j - i), d.end(), data_1.begin()) );
        }
```

```
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/move_iterators/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/move_iterators/69478.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// Copyright (C) 2016-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// PR libstdc++/69478

#include <algorithm>
#include <iterator>

void
test01()
{
  // A move-only type that is also a trivial class.
  struct trivial_rvalstruct
  {
    trivial_rvalstruct() = default;
    trivial_rvalstruct(trivial_rvalstruct&&) = default;
    trivial_rvalstruct& operator=(trivial_rvalstruct&&) = default;
  };
  static_assert(std::is_trivial<trivial_rvalstruct>::value, "");

  trivial_rvalstruct a[1], b[1];
  copy_backward(std::make_move_iterator(a), std::make_move_iterator(a+1), b);
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_backward/move_iterators/1.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
```

```
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#undef _GLIBCXX_CONCEPT_CHECKS

#include <algorithm>
#include <iterator>
#include <testsuite_hooks.h>
#include <testsuite_iterators.h>
#include <testsuite_rvalref.h>

using __gnu_test::test_container;
using __gnu_test::bidirectional_iterator_wrapper;
using __gnu_test::rvalstruct;
using std::copy_backward;

typedef test_container<rvalstruct,
                       bidirectional_iterator_wrapper> container_in;
typedef test_container<rvalstruct,
                       bidirectional_iterator_wrapper> container_out;

void test01()
{
  int inarray[] = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 };
  const int size = sizeof(inarray) / sizeof(int);

  rvalstruct in[size], out[size];
  std::copy(inarray, inarray + size, in);
  std::fill(out, out + size, 0);

  container_in incon(in, in + size);
  container_out outcon(out, out + size);

  copy_backward(std::move_iterator<bidirectional_iterator_wrapper<rvalstruct> >(incon.begin()),
                std::move_iterator<bidirectional_iterator_wrapper<rvalstruct> >(incon.end()),
                outcon.end());
  VERIFY( std::equal(out, out + size, inarray) );
  for (int z = 0; z < size; ++z)
    VERIFY( out[z].valid );
  for (int z = 0; z < size; ++z)
    VERIFY( !in[z].valid );
}

int main()
{
  test01();
  return 0;
```

```
}
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/58982.cc
------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 25.3.1 copy

// { dg-do compile { target c++11 } }

#include <algorithm>

// libstdc++/58982

// trivial class that is not assignable
struct T
{
  T() = default;
  ~T() = default;

  T& operator=(const T&) = delete;
};

void
test01(T* result)
{
  T t[1];
  std::copy(t, t+1, result); // { dg-error "here" }
}
// { dg-prune-output "not assignable" }
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/wchar_t/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/wchar_t/2.cc
------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>
```

```
// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <sstream>
#include <algorithm>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef istreambuf_iterator<wchar_t> in_iterator_type;

  const wchar_t data1[] = L"Drei Phantasien nach Friedrich Holderlin";
  const wstring str1(data1);
  wistringstream iss1(str1);
  in_iterator_type beg1(iss1);
  in_iterator_type end1;

  wchar_t buffer1[sizeof(data1) * 5 / sizeof(wchar_t)];
  wmemset(buffer1, L'*', sizeof(buffer1) / sizeof(wchar_t));
  wchar_t* out1 = buffer1;

  out1 = copy(beg1, beg1, out1);
  VERIFY( out1 == buffer1 );

  out1 = copy(end1, end1, out1);
  VERIFY( out1 == buffer1 );

  out1 = copy(beg1, end1, out1);
  VERIFY( wstring(buffer1, out1) == str1 );
  *out1++ = L'x';
  VERIFY( wstring(buffer1, out1) == str1 + L'x' );
  wmemset(buffer1, L'*', sizeof(buffer1) / sizeof(wchar_t));

  iss1.seekg(0);
  out1 = buffer1;
  wmemset(buffer1, L'*', sizeof(buffer1) / sizeof(wchar_t));
  out1 = copy(beg1, end1, out1);
  VERIFY( wstring(buffer1, out1) == str1 );
  *out1++ = L'y';
  VERIFY( wstring(buffer1, out1) == str1 + L'y' );
  out1 = buffer1;
```

```
  wmemset(buffer1, L'*', sizeof(buffer1) / sizeof(wchar_t));
  out1 = copy(beg1, end1, out1);
  VERIFY( wstring(buffer1, out1) == L"" );

  iss1.seekg(0);
  out1 = copy(beg1, end1, out1);
  VERIFY( wstring(buffer1, out1) == str1 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/wchar_t/3.cc
-------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <sstream>
#include <algorithm>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef ostreambuf_iterator<wchar_t> out_iterator_type;

  const wchar_t data1[] = L"Drei Phantasien nach Friedrich Holderlin";
  const wstring str1(data1);
  const wchar_t* beg1 = data1;
  const wchar_t* end1 = beg1 + str1.size();

  wostringstream oss1;
  out_iterator_type out1(oss1);

  out1 = copy(beg1, beg1, out1);
  VERIFY( oss1.str().empty() );
```

```
  out1 = copy(end1, end1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = L'x';
  VERIFY( oss1.str() == str1 + L'x' );
  oss1.str(L"");

  oss1.seekp(0);
  oss1.str(L"");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = L'y';
  VERIFY( oss1.str() == str1 + L'y' );
  oss1.str(L"");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );

  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 + str1 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/wchar_t/4.cc
-------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <fstream>
#include <algorithm>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;
```

```
  typedef istreambuf_iterator<wchar_t> in_iterator_type;

  wifstream fbuf_ref("istream_unformatted-1.txt"),
            fbuf("istream_unformatted-1.txt");

  wchar_t buffer_ref[16500],
          buffer[16500];

  fbuf_ref.read(buffer_ref, 16500);

  in_iterator_type beg(fbuf);
  in_iterator_type end;
  copy(beg, end, buffer);

  VERIFY( fbuf_ref.good() );
  VERIFY( fbuf.good() );

  VERIFY( !wmemcmp(buffer, buffer_ref, 16500) );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/wchar_t/1.cc
-------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <sstream>
#include <algorithm>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef istreambuf_iterator<wchar_t> in_iterator_type;
```

```
  typedef ostreambuf_iterator<wchar_t> out_iterator_type;

  const wchar_t data1[] = L"Drei Phantasien nach Friedrich Holderlin";
  const wstring str1(data1);
  wistringstream iss1(str1);
  in_iterator_type beg1(iss1);
  in_iterator_type end1;

  wostringstream oss1;
  out_iterator_type out1(oss1);

  out1 = copy(beg1, beg1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(end1, end1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = L'x';
  VERIFY( oss1.str() == str1 + L'x' );
  oss1.str(L"");

  iss1.seekg(0);
  oss1.seekp(0);
  oss1.str(L"");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = L'y';
  VERIFY( oss1.str() == str1 + L'y' );
  oss1.str(L"");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == L"" );

  iss1.seekg(0);
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/char/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/char/2.cc
-------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
```

```
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <sstream>
#include <algorithm>
#include <cstring>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef istreambuf_iterator<char> in_iterator_type;

  const char data1[] = "Drei Phantasien nach Friedrich Holderlin";
  const string str1(data1);
  istringstream iss1(str1);
  in_iterator_type beg1(iss1);
  in_iterator_type end1;

  char buffer1[sizeof(data1) * 5];
  memset(buffer1, '*', sizeof(buffer1));
  char* out1 = buffer1;

  out1 = copy(beg1, beg1, out1);
  VERIFY( out1 == buffer1 );

  out1 = copy(end1, end1, out1);
  VERIFY( out1 == buffer1 );

  out1 = copy(beg1, end1, out1);
  VERIFY( string(buffer1, out1) == str1 );
  *out1++ = 'x';
  VERIFY( string(buffer1, out1) == str1 + 'x' );
  memset(buffer1, '*', sizeof(buffer1));

  iss1.seekg(0);
  out1 = buffer1;
  memset(buffer1, '*', sizeof(buffer1));
  out1 = copy(beg1, end1, out1);
  VERIFY( string(buffer1, out1) == str1 );
  *out1++ = 'y';
  VERIFY( string(buffer1, out1) == str1 + 'y' );
  out1 = buffer1;
  memset(buffer1, '*', sizeof(buffer1));
  out1 = copy(beg1, end1, out1);
  VERIFY( string(buffer1, out1) == "" );

  iss1.seekg(0);
  out1 = copy(beg1, end1, out1);
```

```
  VERIFY( string(buffer1, out1) == str1 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/char/3.cc
-------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <sstream>
#include <algorithm>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef ostreambuf_iterator<char> out_iterator_type;

  const char data1[] = "Drei Phantasien nach Friedrich Holderlin";
  const string str1(data1);
  const char* beg1 = data1;
  const char* end1 = beg1 + str1.size();

  ostringstream oss1;
  out_iterator_type out1(oss1);

  out1 = copy(beg1, beg1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(end1, end1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = 'x';
```

```
  VERIFY( oss1.str() == str1 + 'x' );
  oss1.str("");

  oss1.seekp(0);
  oss1.str("");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = 'y';
  VERIFY( oss1.str() == str1 + 'y' );
  oss1.str("");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );

  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 + str1 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/char/4.cc
-------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <fstream>
#include <algorithm>
#include <cstring>
#include <testsuite_hooks.h>

// { dg-require-fileio "" }

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef istreambuf_iterator<char> in_iterator_type;
```

```
  ifstream fbuf_ref("istream_unformatted-1.txt"),
           fbuf("istream_unformatted-1.txt");

  char buffer_ref[16500],
       buffer[16500];

  fbuf_ref.read(buffer_ref, 16500);

  in_iterator_type beg(fbuf);
  in_iterator_type end;
  copy(beg, end, buffer);

  VERIFY( fbuf_ref.good() );
  VERIFY( fbuf.good() );

  VERIFY( !memcmp(buffer, buffer_ref, 16500) );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/streambuf_iterators/char/1.cc
-------------------------------------------------------------------
// 2006-03-20  Paolo Carlini  <pcarlini@suse.de>

// Copyright (C) 2006-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <iterator>
#include <sstream>
#include <algorithm>
#include <testsuite_hooks.h>

// In the occasion of libstdc++/25482
void test01()
{
  using namespace std;

  typedef istreambuf_iterator<char> in_iterator_type;
  typedef ostreambuf_iterator<char> out_iterator_type;

  const char data1[] = "Drei Phantasien nach Friedrich Holderlin";
```

```
  const string str1(data1);
  istringstream iss1(str1);
  in_iterator_type beg1(iss1);
  in_iterator_type end1;

  ostringstream oss1;
  out_iterator_type out1(oss1);

  out1 = copy(beg1, beg1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(end1, end1, out1);
  VERIFY( oss1.str().empty() );

  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = 'x';
  VERIFY( oss1.str() == str1 + 'x' );
  oss1.str("");

  iss1.seekg(0);
  oss1.seekp(0);
  oss1.str("");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
  *out1 = 'y';
  VERIFY( oss1.str() == str1 + 'y' );
  oss1.str("");
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == "" );

  iss1.seekg(0);
  out1 = copy(beg1, end1, out1);
  VERIFY( oss1.str() == str1 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/2.cc
-------------------------------------------------------------------
// Copyright (C) 2004-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
```

```
// <http://www.gnu.org/licenses/>.

// 25.2.1 [lib.alg.copy] Copy.

#include <algorithm>
#include <vector>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);
  const vector<int> a(A, A + N);

  int i1[N];
  copy(a.begin(), a.end(), i1);
  VERIFY( equal(i1, i1 + N, a.begin()) );

  vector<int> v1(N);
  copy(a.begin(), a.end(), v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), a.begin()) );

  short s1[N];
  copy(a.begin(), a.end(), s1);
  VERIFY( equal(s1, s1 + N, a.begin()) );

  int i2[N];
  copy_backward(a.begin(), a.end(), i2 + N);
  VERIFY( equal(i2, i2 + N, a.begin()) );

  vector<int> v2(N);
  copy_backward(a.begin(), a.end(), v2.end());
  VERIFY( equal(v2.begin(), v2.end(), a.begin()) );

  short s2[N];
  copy_backward(a.begin(), a.end(), s2 + N);
  VERIFY( equal(s2, s2 + N, a.begin()) );
}

int
main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/3.cc
-------------------------------------------------------------------
// Copyright (C) 2004-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
```

```
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 25.2.1 [lib.alg.copy] Copy.

#include <algorithm>
#include <vector>
#include <deque>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);
  const deque<int> a(A, A + N);

  int i1[N];
  copy(a.begin(), a.end(), i1);
  VERIFY( equal(i1, i1 + N, a.begin()) );

  vector<int> v1(N);
  copy(a.begin(), a.end(), v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), a.begin()) );

  short s1[N];
  copy(a.begin(), a.end(), s1);
  VERIFY( equal(s1, s1 + N, a.begin()) );

  int i2[N];
  copy_backward(a.begin(), a.end(), i2 + N);
  VERIFY( equal(i2, i2 + N, a.begin()) );

  vector<int> v2(N);
  copy_backward(a.begin(), a.end(), v2.end());
  VERIFY( equal(v2.begin(), v2.end(), a.begin()) );

  short s2[N];
  copy_backward(a.begin(), a.end(), s2 + N);
  VERIFY( equal(s2, s2 + N, a.begin()) );
}

int
main()
{
  test01();
  return 0;
}
```

---

gcc/libstdc++-v3/testsuite/25_algorithms/copy/requirements/

```
---------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/requirements/explicit_instantiation/
---------------------------------------------------------------------
---------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/requirements/explicit_instantiation/2.cc
---------------------------------------------------------------------
// { dg-do compile }

// 2007-09-20 Benjamin Kosnik <bkoz@redhat.com>

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_api.h>

namespace std
{
  using __gnu_test::NonDefaultConstructible;

  typedef NonDefaultConstructible               value_type;
  typedef value_type*           iterator_type;

  template iterator_type copy(iterator_type, iterator_type, iterator_type);
}
---------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/requirements/explicit_instantiation/pod.cc
---------------------------------------------------------------------
// { dg-do compile }

// 2007-09-20 Benjamin Kosnik <bkoz@redhat.com>

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
```

```
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_character.h>

namespace std
{
  using __gnu_test::pod_int;

  typedef pod_int               value_type;
  typedef value_type*           iterator_type;

  template iterator_type copy(iterator_type, iterator_type, iterator_type);
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/deque_iterators/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/deque_iterators/1.cc
-------------------------------------------------------------------
// 2009-12-23  Paolo Carlini  <paolo.carlini@oracle.com>
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <deque>
#include <testsuite_hooks.h>

void test01()
{
  using namespace std;

  deque<long> data(200);
  for (unsigned i = 0; i < data.size(); ++i)
    data[i] = i;

  const deque<long> data_1(data.size(), -1);

  for (unsigned i = 0; i < data.size(); i += 2)
    for (unsigned j = i; j <= data.size(); j += 3)
      for (unsigned k = 0; k + (j - i) <= data.size(); k += 5)
        {
```

```
          deque<long> d(data.size(), -1);
          copy(data.begin() + i, data.begin() + j, d.begin() + k);

          VERIFY( equal(data.begin() + i, data.begin() + j,
                        d.begin() + k) );
          VERIFY( equal(d.begin(), d.begin() + k, data_1.begin()) );
          VERIFY( equal(d.begin() + k + (j - i), d.end(), data_1.begin()) );
        }
}

int main()
{
  test01();
  return 0;
}
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/34595.cc
-----------------------------------------------------------------
// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 25.2.1 [lib.alg.copy] Copy.

#include <algorithm>
#include <testsuite_hooks.h>

class Counting_output_iterator
: public std::iterator< std::output_iterator_tag, void, void, void, void >
{
  std::size_t c;
public:
  Counting_output_iterator() : c(0) {}
  Counting_output_iterator& operator++() { return *this; }
  Counting_output_iterator& operator*() { return *this; }

  template <typename T>
  void operator=(const T&) { ++c; }

  std::size_t current_counter() const { return c; }
};

// libstdc++/34595
void test01()
{
  int t[10] = {0,};
```

```
  Counting_output_iterator cnt;
  std::size_t res = std::copy(t+0, t+5, cnt).current_counter();

  VERIFY( res == 5 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/4.cc
-------------------------------------------------------------
// Copyright (C) 2004-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 25.2.1 [lib.alg.copy] Copy.

#include <algorithm>
#include <vector>
#include <list>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);
  const list<int> a(A, A + N);

  int i1[N];
  copy(a.begin(), a.end(), i1);
  VERIFY( equal(i1, i1 + N, a.begin()) );

  vector<int> v1(N);
  copy(a.begin(), a.end(), v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), a.begin()) );

  short s1[N];
  copy(a.begin(), a.end(), s1);
  VERIFY( equal(s1, s1 + N, a.begin()) );
```

```
  int i2[N];
  copy_backward(a.begin(), a.end(), i2 + N);
  VERIFY( equal(i2, i2 + N, a.begin()) );

  vector<int> v2(N);
  copy_backward(a.begin(), a.end(), v2.end());
  VERIFY( equal(v2.begin(), v2.end(), a.begin()) );

  short s2[N];
  copy_backward(a.begin(), a.end(), s2 + N);
  VERIFY( equal(s2, s2 + N, a.begin()) );
}

int
main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/1.cc
-------------------------------------------------------------------
// Copyright (C) 2001-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 25.2.1 [lib.alg.copy] Copy.

#include <algorithm>
#include <vector>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);

  int i1[N];
  copy(A, A + N, i1);
  VERIFY( equal(i1, i1 + N, A) );

  vector<int> v1(N);
  copy(A, A + N, v1.begin());
```

```
  VERIFY( equal(v1.begin(), v1.end(), A) );

  short s1[N];
  copy(A, A + N, s1);
  VERIFY( equal(s1, s1 + N, A) );

  int i2[N];
  copy_backward(A, A + N, i2 + N);
  VERIFY( equal(i2, i2 + N, A) );

  vector<int> v2(N);
  copy_backward(A, A + N, v2.end());
  VERIFY( equal(v2.begin(), v2.end(), A) );

  short s2[N];
  copy_backward(A, A + N, s2 + N);
  VERIFY( equal(s2, s2 + N, A) );
}

int
main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/move_iterators/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/move_iterators/69478.cc
-------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// Copyright (C) 2016-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// PR libstdc++/69478

#include <algorithm>
#include <iterator>

void
test01()
{
  // A move-only type that is also a trivial class.
```

```
  struct trivial_rvalstruct
  {
    trivial_rvalstruct() = default;
    trivial_rvalstruct(trivial_rvalstruct&&) = default;
    trivial_rvalstruct& operator=(trivial_rvalstruct&&) = default;
  };
  static_assert(std::is_trivial<trivial_rvalstruct>::value, "");

  trivial_rvalstruct a[1], b[1];
  copy(std::make_move_iterator(a), std::make_move_iterator(a + 1), b);
}
---------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy/move_iterators/1.cc
---------------------------------------------------------------------
// { dg-do run { target c++11 } }

// Copyright (C) 2007-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#undef _GLIBCXX_CONCEPT_CHECKS

#include <algorithm>
#include <iterator>
#include <testsuite_hooks.h>
#include <testsuite_iterators.h>
#include <testsuite_rvalref.h>

using __gnu_test::test_container;
using __gnu_test::input_iterator_wrapper;
using __gnu_test::output_iterator_wrapper;
using __gnu_test::rvalstruct;
using std::copy;

typedef test_container<rvalstruct, input_iterator_wrapper> container_in;
typedef test_container<rvalstruct, output_iterator_wrapper> container_out;

void test01()
{
  int inarray[] = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 };
  const int size = sizeof(inarray) / sizeof(int);

  rvalstruct in[size], out[size];
  std::copy(inarray, inarray + size, in);

  container_in incon(in, in + size);
```

```
  container_out outcon(out, out + size);

  copy(std::move_iterator<input_iterator_wrapper<rvalstruct> >(incon.begin()),
       std::move_iterator<input_iterator_wrapper<rvalstruct> >(incon.end()),
       outcon.begin());
  VERIFY( std::equal(out, out + size, inarray) );
  for (int z = 0; z < size; ++z)
    VERIFY( out[z].valid );
  for (int z = 0; z < size; ++z)
    VERIFY( !in[z].valid );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/
-------------------------------------------------------------------
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/58982.cc
-------------------------------------------------------------------
// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 25.3.1 copy

// { dg-do compile { target c++11 } }

#include <algorithm>

// libstdc++/58982

// trivial class that is not assignable
struct T
{
  T() = default;
  ~T() = default;

  T& operator=(const T&) = delete;
};

void
test01(T* result)
```

```
{
  T t[1];
  std::copy_n(t, 1, result); // { dg-error "here" }
}
// { dg-prune-output "not assignable" }
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/2.cc
------------------------------------------------------------------
// { dg-do run { target c++11 } }

// 2008-06-29  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <vector>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);
  const vector<int> a(A, A + N);

  int i1[N];
  copy_n(a.begin(), N, i1);
  VERIFY( equal(i1, i1 + N, a.begin()) );

  vector<int> v1(N);
  copy_n(a.begin(), N, v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), a.begin()) );

  short s1[N];
  copy_n(a.begin(), N, s1);
  VERIFY( equal(s1, s1 + N, a.begin()) );
}

int
main()
{
  test01();
```

```
  return 0;
}
--------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/3.cc
--------------------------------------------------------------
// { dg-do run { target c++11 } }

// 2008-06-29  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <vector>
#include <deque>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);
  const deque<int> a(A, A + N);

  int i1[N];
  copy_n(a.begin(), N, i1);
  VERIFY( equal(i1, i1 + N, a.begin()) );

  vector<int> v1(N);
  copy_n(a.begin(), N, v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), a.begin()) );

  short s1[N];
  copy_n(a.begin(), N, s1);
  VERIFY( equal(s1, s1 + N, a.begin()) );
}

int
main()
{
  test01();
  return 0;
}
```

```
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/requirements/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/requirements/explicit_instantiation/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/requirements/explicit_instantiation/2.cc
------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// 2008-06-29  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_api.h>

namespace std
{
  using __gnu_test::NonDefaultConstructible;

  typedef NonDefaultConstructible               value_type;
  typedef value_type*           iterator_type;
  typedef unsigned short        size_type;

  template iterator_type copy_n(iterator_type, size_type, iterator_type);
}
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/requirements/explicit_instantiation/pod.cc
------------------------------------------------------------------
// { dg-do compile { target c++11 } }

// 2008-06-24  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
```

```
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.


#include <algorithm>
#include <testsuite_character.h>

namespace std
{
  using __gnu_test::pod_int;

  typedef pod_int               value_type;
  typedef value_type*           iterator_type;
  typedef unsigned short        size_type;

  template iterator_type copy_n(iterator_type, size_type, iterator_type);
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/50119.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }

// Copyright (C) 2011-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <vector>
#include <sstream>
#include <iterator>
#include <testsuite_hooks.h>

// libstdc++/50119
void test01()
{
  using namespace std;

  vector<int> v;
  istringstream s("1 2 3 4 5");
```

```
  copy_n(istream_iterator<int>(s), 2, back_inserter(v));
  VERIFY( v.size() == 2 );
  VERIFY( v[0] == 1 );
  VERIFY( v[1] == 2 );

  copy_n(istream_iterator<int>(s), 2, back_inserter(v));
  VERIFY( v.size() == 4 );
  VERIFY( v[0] == 1 );
  VERIFY( v[1] == 2 );
  VERIFY( v[2] == 3 );
  VERIFY( v[3] == 4 );
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/4.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }

// 2008-06-29  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <vector>
#include <list>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);
  const list<int> a(A, A + N);

  int i1[N];
  copy_n(a.begin(), N, i1);
  VERIFY( equal(i1, i1 + N, a.begin()) );
```

```
  vector<int> v1(N);
  copy_n(a.begin(), N, v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), a.begin()) );

  short s1[N];
  copy_n(a.begin(), N, s1);
  VERIFY( equal(s1, s1 + N, a.begin()) );
}

int
main()
{
  test01();
  return 0;
}
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/1.cc
------------------------------------------------------------------
// { dg-do run { target c++11 } }

// 2008-06-29  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <algorithm>
#include <vector>
#include <testsuite_hooks.h>

void
test01()
{
  using namespace std;

  const int A[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17};
  const int N = sizeof(A) / sizeof(int);

  int i1[N];
  copy_n(A, N, i1);
  VERIFY( equal(i1, i1 + N, A) );

  vector<int> v1(N);
  copy_n(A, N, v1.begin());
  VERIFY( equal(v1.begin(), v1.end(), A) );
```

```
  short s1[N];
  copy_n(A, N, s1);
  VERIFY( equal(s1, s1 + N, A) );
}

int
main()
{
  test01();
  return 0;
}
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/move_iterators/
------------------------------------------------------------------
------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/25_algorithms/copy_n/move_iterators/1.cc
------------------------------------------------------------------
// { dg-do run { target c++11 } }

// 2008-06-29  Paolo Carlini  <paolo.carlini@oracle.com>

// Copyright (C) 2008-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#undef _GLIBCXX_CONCEPT_CHECKS

#include <algorithm>
#include <iterator>
#include <testsuite_hooks.h>
#include <testsuite_iterators.h>
#include <testsuite_rvalref.h>

using __gnu_test::test_container;
using __gnu_test::input_iterator_wrapper;
using __gnu_test::output_iterator_wrapper;
using __gnu_test::rvalstruct;
using std::copy_n;

typedef test_container<rvalstruct, input_iterator_wrapper> container_in;
typedef test_container<rvalstruct, output_iterator_wrapper> container_out;

void test01()
{
  int inarray[] = { 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 };
```

```
  const int size = sizeof(inarray) / sizeof(int);

  rvalstruct in[size], out[size];
  std::copy(inarray, inarray + size, in);

  container_in incon(in, in + size);
  container_out outcon(out, out + size);

  copy_n(std::move_iterator<input_iterator_wrapper<rvalstruct> >(incon.begin()),
         size, outcon.begin());
  VERIFY( std::equal(out, out + size, inarray) );
  for (int z = 0; z < size; ++z)
    VERIFY( out[z].valid );
  for (int z = 0; z < size; ++z)
    VERIFY( !in[z].valid );
}

int main()
{
  test01();
  return 0;
}
-----------------------------------------------------------------
gcc/libstdc++-v3/testsuite/20_util/shared_ptr/cons/copy.cc
-----------------------------------------------------------------
// { dg-do run { target c++11 } }

// Copyright (C) 2005-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

// 20.6.6.2 Template class shared_ptr [util.smartptr.shared]

#include <memory>
#include <testsuite_hooks.h>

struct A
{
  A() { ++ctor_count; }
  virtual ~A() { ++dtor_count; }
  static long ctor_count;
  static long dtor_count;
};
long A::ctor_count = 0;
long A::dtor_count = 0;
```

```
struct B : A
{
  B() { ++ctor_count; }
  virtual ~B() { ++dtor_count; }
  static long ctor_count;
  static long dtor_count;
};
long B::ctor_count = 0;
long B::dtor_count = 0;

void deleter(A* p) { delete p; }

struct reset_count_struct
{
  ~reset_count_struct()
  {
    A::ctor_count = 0;
    A::dtor_count = 0;
    B::ctor_count = 0;
    B::dtor_count = 0;
  }
};

// 20.6.6.2.1 shared_ptr constructors [util.smartptr.shared.const]

// Copy construction
int test01()
{
  reset_count_struct __attribute__((unused)) reset;

  std::shared_ptr<A> a1;
  std::shared_ptr<A> a2(a1);
  VERIFY( a2.use_count() == 0 );
  VERIFY( A::ctor_count == 0 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test02()
{
  reset_count_struct __attribute__((unused)) reset;

  std::shared_ptr<A> a1(new A);
  std::shared_ptr<A> a2(a1);
  VERIFY( a2.use_count() == 2 );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 0 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test03()
```

```
{
  reset_count_struct __attribute__((unused)) reset;

  std::shared_ptr<B> b(new B);
  std::shared_ptr<A> a(b);
  VERIFY( a.use_count() == 2 );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 1 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
test04()
{
  reset_count_struct __attribute__((unused)) reset;

  std::shared_ptr<B> b(new B, &deleter);
  std::shared_ptr<A> a(b);
  VERIFY( a.use_count() == 2 );
  VERIFY( A::ctor_count == 1 );
  VERIFY( A::dtor_count == 0 );
  VERIFY( B::ctor_count == 1 );
  VERIFY( B::dtor_count == 0 );

  return 0;
}

int
main()
{
  test01();
  test02();
  test03();
  test04();
  return 0;
}
---------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/20_util/optional/cons/copy.cc
---------------------------------------------------------------------
// { dg-options "-std=gnu++17" }
// { dg-do run }

// Copyright (C) 2013-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
```

```
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <optional>
#include <testsuite_hooks.h>

struct tracker
{
  tracker(int value) : value(value) { ++count; }
  ~tracker() { --count; }

  tracker(tracker const& other) : value(other.value) { ++count; }
  tracker(tracker&& other) : value(other.value)
  {
    other.value = -1;
    ++count;
  }

  tracker& operator=(tracker const&) = default;
  tracker& operator=(tracker&&) = default;

  int value;

  static int count;
};

int tracker::count = 0;

struct exception { };

struct throwing_copy
{
  throwing_copy() = default;
  throwing_copy(throwing_copy const&) { throw exception {}; }
};

int main()
{
  // [20.5.4.1] Constructors

  {
    std::optional<long> o;
    auto copy = o;
    VERIFY( !copy );
    VERIFY( !o );
  }

  {
    const long val = 0x1234ABCD;
    std::optional<long> o { std::in_place, val};
    auto copy = o;
    VERIFY( copy );
    VERIFY( *copy == val );
    VERIFY( o && o == val );
  }

  {
    std::optional<tracker> o;
    auto copy = o;
```

```
    VERIFY( !copy );
    VERIFY( tracker::count == 0 );
    VERIFY( !o );
  }

  {
    std::optional<tracker> o { std::in_place, 333 };
    auto copy = o;
    VERIFY( copy );
    VERIFY( copy->value == 333 );
    VERIFY( tracker::count == 2 );
    VERIFY( o && o->value == 333 );
  }

  enum outcome { nothrow, caught, bad_catch };

  {
    outcome result = nothrow;
    std::optional<throwing_copy> o;

    try
    {
      auto copy = o;
    }
    catch(exception const&)
    { result = caught; }
    catch(...)
    { result = bad_catch; }

    VERIFY( result == nothrow );
  }

  {
    outcome result = nothrow;
    std::optional<throwing_copy> o { std::in_place };

    try
    {
      auto copy = o;
    }
    catch(exception const&)
    { result = caught; }
    catch(...)
    { result = bad_catch; }

    VERIFY( result == caught );
  }

  VERIFY( tracker::count == 0 );
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/26_numerics/random/independent_bits_engine/cons/copy.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
```

```
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <random>

void
test01()
{
  std::independent_bits_engine
    <
      std::subtract_with_carry_engine<uint_fast64_t, 48, 5, 12>,
      48,
      uint_fast64_t
    > e(1);

  const auto f(e);
  auto g(f);
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/26_numerics/random/subtract_with_carry_engine/cons/copy.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
```

```
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <random>

void
test01()
{
  std::subtract_with_carry_engine<unsigned long, 24, 10, 24> e(1);

  const auto f(e);
  auto g(f);
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
```

---

gcc/libstdc++-v3/testsuite/26_numerics/random/discard_block_engine/cons/copy.cc

---

```
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <random>

void
test01()
{
  std::discard_block_engine
    <
      std::subtract_with_carry_engine<unsigned long, 24, 10, 24>,
      389, 24
    > e(1);

  const auto f(e);
  auto g(f);
```

```
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/26_numerics/random/linear_congruential_engine/cons/copy.cc
-------------------------------------------------------------
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <random>

void
test01()
{
  std::linear_congruential_engine<unsigned long, 48271, 0, 2147483647> e(1);

  const auto f(e);
  auto g(f);
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------
gcc/libstdc++-v3/testsuite/26_numerics/random/shuffle_order_engine/cons/copy.cc
-------------------------------------------------------------
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
```

```
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <random>

void
test01()
{
  std::shuffle_order_engine
    <
      std::linear_congruential_engine<uint_fast32_t,16807UL, 0UL, 2147483647UL>,
      256
    > e(1);

  const auto f(e);
  auto g(f);
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
-------------------------------------------------------------------
gcc/libstdc++-v3/testsuite/26_numerics/random/mersenne_twister_engine/cons/copy.cc
-------------------------------------------------------------------
// { dg-do run { target c++11 } }
// { dg-require-cstdint "" }
//
// 2010-02-16  Paolo Carlini  <paolo.carlini@oracle.com>
//
// Copyright (C) 2010-2017 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.
//
// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
```

```
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

#include <random>

void
test01()
{
  typedef unsigned long value_type;

  std::mersenne_twister_engine<
    value_type, 32, 624, 397, 31,
    0x9908b0dful, 11,
    0xffffffffUl, 7,
    0x9d2c5680ul, 15,
      0xefc60000ul, 18, 1812433253ul> e(1);

  const auto f(e);
  auto g(f);
  g = g; // Suppress unused warning.
}

int main()
{
  test01();
  return 0;
}
------------------------------------------------------------------
gcc/libsanitizer/LICENSE.TXT
------------------------------------------------------------------
==============================================================================
compiler_rt License
==============================================================================

The compiler_rt library is dual licensed under both the University of Illinois
"BSD-Like" license and the MIT license.  As a user of this code you may choose
to use it under either license.  As a contributor, you agree to allow your code
to be used under both.

Full text of the relevant licenses is included below.

==============================================================================

University of Illinois/NCSA
Open Source License

Copyright (c) 2009-2012 by the contributors listed in CREDITS.TXT

All rights reserved.

Developed by:

    LLVM Team

    University of Illinois at Urbana-Champaign

    http://llvm.org

Permission is hereby granted, free of charge, to any person obtaining a copy of
```

this software and associated documentation files (the "Software"), to deal with
the Software without restriction, including without limitation the rights to
use, copy, modify, merge, publish, distribute, sublicense, and/or sell copies
of the Software, and to permit persons to whom the Software is furnished to do
so, subject to the following conditions:

    * Redistributions of source code must retain the above copyright notice,
      this list of conditions and the following disclaimers.

    * Redistributions in binary form must reproduce the above copyright notice,
      this list of conditions and the following disclaimers in the
      documentation and/or other materials provided with the distribution.

    * Neither the names of the LLVM Team, University of Illinois at
      Urbana-Champaign, nor the names of its contributors may be used to
      endorse or promote products derived from this Software without specific
      prior written permission.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS
FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
CONTRIBUTORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS WITH THE
SOFTWARE.

==

Copyright (c) 2009-2012 by the contributors listed in CREDITS.TXT

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

==
Copyrights and Licenses for Third Party Software Distributed with LLVM:
==
The LLVM software contains code written by third parties. Such software will
have its own individual LICENSE.TXT file in the directory in which it appears.
This file will describe the copyrights, license, and restrictions which apply
to that code.

The disclaimer of warranty in the University of Illinois Open Source License
applies to all code in the LLVM Distribution, and nothing in any of the
other licenses gives permission to use the names of the LLVM Team or the

University of Illinois to endorse or promote products derived from this
Software.

The following pieces of software have additional or alternate copyrights,
licenses, and/or restrictions:

Program	Directory
mach_override	lib/interception/mach_override

---

gcc/COPYING.LIB

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
below.

When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you. You must make sure that they, too, receive or can get the source
code. If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling

it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

```
  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.


  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.
```

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library

facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

    b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any

patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU

FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or
your school, if any, to sign a "copyright disclaimer" for the library,
if necessary. Here is a sample; alter the names:

```
Yoyodyne, Inc., hereby disclaims all copyright interest in the
library `Frob' (a library for tweaking knobs) written by James
Random Hacker.

<signature of Ty Coon>, 1 April 1990
Ty Coon, President of Vice
```

That's all there is to it!

```
----------------------------------------------------------------
gcc/libgomp/testsuite/libgomp.c/copyin-1.c
----------------------------------------------------------------
/* { dg-do run } */
/* { dg-require-effective-target tls_runtime } */

#include <omp.h>
#include <stdlib.h>

int thr = 32;
#pragma omp threadprivate (thr)

int
main (void)
{
  int l = 0;

  omp_set_dynamic (0);
  omp_set_num_threads (6);

#pragma omp parallel copyin (thr) reduction (||:l)
  {
    l = thr != 32;
    thr = omp_get_thread_num () + 11;
  }

  if (l || thr != 11)
    abort ();

#pragma omp parallel reduction (||:l)
  l = thr != omp_get_thread_num () + 11;

  if (l)
    abort ();
  return 0;
}
----------------------------------------------------------------
gcc/libgomp/testsuite/libgomp.c/copyin-2.c
----------------------------------------------------------------
/* { dg-do run } */
/* { dg-require-effective-target tls_runtime } */

#include <omp.h>
#include <stdlib.h>

struct { int t; char buf[64]; } thr = { 32, "" };
#pragma omp threadprivate (thr)

int
main (void)
{
  int l = 0;

  omp_set_dynamic (0);
  omp_set_num_threads (6);

#pragma omp parallel copyin (thr) reduction (||:l)
  {
    l = thr.t != 32;
```

```
    thr.t = omp_get_thread_num () + 11;
  }

  if (l || thr.t != 11)
    abort ();

#pragma omp parallel reduction (||:l)
  l = thr.t != omp_get_thread_num () + 11;

  if (l)
    abort ();
  return 0;
}
-----------------------------------------------------------------
gcc/libgomp/testsuite/libgomp.c/copyin-3.c
-----------------------------------------------------------------
/* { dg-do run } */
/* { dg-require-effective-target tls_runtime } */

#include <omp.h>
#include <stdlib.h>

int thr;
#pragma omp threadprivate (thr)

int
test (int l)
{
  return l || (thr != omp_get_thread_num () * 2);
}

int
main (void)
{
  int l = 0;

  omp_set_dynamic (0);
  omp_set_num_threads (6);

  thr = 8;
  /* Broadcast the value to all threads.  */
#pragma omp parallel copyin (thr)
  ;

#pragma omp parallel reduction (||:l)
  {
    /* Now test if the broadcast succeeded.  */
    l = thr != 8;
    thr = omp_get_thread_num () * 2;
#pragma omp barrier
    l = test (l);
  }

  if (l)
    abort ();
  return 0;
}
-----------------------------------------------------------------
gcc/libgomp/testsuite/libgomp.c++/copyin-1.C
```

```
---------------------------------------------------------------
// { dg-do run }
// { dg-require-effective-target tls_runtime }

#include <omp.h>

extern "C" void abort (void);

int thr = 32;
#pragma omp threadprivate (thr)

int
main (void)
{
  int l = 0;

  omp_set_dynamic (0);
  omp_set_num_threads (6);

#pragma omp parallel copyin (thr) reduction (||:l)
  {
    l = thr != 32;
    thr = omp_get_thread_num () + 11;
  }

  if (l || thr != 11)
    abort ();

#pragma omp parallel reduction (||:l)
  l = thr != omp_get_thread_num () + 11;

  if (l)
    abort ();
  return 0;
}
---------------------------------------------------------------
gcc/libgomp/testsuite/libgomp.c++/copyin-2.C
---------------------------------------------------------------
// { dg-do run }
// { dg-require-effective-target tls_runtime }

#include <omp.h>

extern "C" void abort (void);

struct S { int t; char buf[64]; } thr = { 32, "" };
#pragma omp threadprivate (thr)

int
main (void)
{
  int l = 0;

  omp_set_dynamic (0);
  omp_set_num_threads (6);

#pragma omp parallel copyin (thr) reduction (||:l)
  {
    l = thr.t != 32;
```

```
    thr.t = omp_get_thread_num () + 11;
  }

  if (l || thr.t != 11)
    abort ();

#pragma omp parallel reduction (||:l)
  l = thr.t != omp_get_thread_num () + 11;

  if (l)
    abort ();
  return 0;
}
------------------------------------------------------------------
gcc/libiberty/copying-lib.texi
------------------------------------------------------------------
@node Library Copying
@appendixsec GNU LESSER GENERAL PUBLIC LICENSE

@cindex LGPL, Lesser General Public License
@center Version 2.1, February 1999

@display
Copyright @copyright{} 1991-2017 Free Software Foundation, Inc.
51 Franklin Street - Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
as the successor of the GNU Library Public License, version 2, hence the
version number 2.1.]
@end display

@appendixsubsec Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software---to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software---typically libraries---of the Free
Software Foundation and other authors who decide to use it.  You can use
it too, but we suggest you first think carefully about whether this
license or the ordinary General Public License is the better strategy to
use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of it
in new free programs; and that you are informed that you can do these
things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
```

you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the @dfn{Lesser} General Public License because it does @emph{Less} to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

```
  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
``work based on the library'' and a ``work that uses the library''.  The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

@iftex
@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
@end iftex
@ifinfo
@center GNU LESSER GENERAL PUBLIC LICENSE
@center TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
@end ifinfo

@enumerate 0
@item
This License Agreement applies to any software library or other program
which contains a notice placed by the copyright holder or other
authorized party saying it may be distributed under the terms of this
Lesser General Public License (also called ``this License'').  Each
licensee is addressed as ``you''.

  A ``library'' means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The ``Library'', below, refers to any such software library or work
which has been distributed under these terms.  A ``work based on the
Library'' means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language.  (Hereinafter, translation is
included without limitation in the term ``modification''.)

  ``Source code'' for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.
```

```
@item
You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

@item
You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

@enumerate a
@item
The modified work must itself be a software library.

@item
You must cause the files modified to carry prominent notices
stating that you changed the files and the date of any change.

@item
You must cause the whole of the work to be licensed at no
charge to all third parties under the terms of this License.

@item
If a facility in the modified Library refers to a function or a
table of data to be supplied by an application program that uses
the facility, other than as an argument passed when the facility
is invoked, then you must make a good faith effort to ensure that,
in the event an application does not supply such function or
table, the facility still operates, and performs whatever part of
its purpose remains meaningful.

(For example, a function in a library to compute square roots has
a purpose that is entirely well-defined independent of the
application.  Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)
@end enumerate

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.
```

```
Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

@item
You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

@item
You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

@item
A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a ``work that uses the Library''.  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a ``work that uses the Library'' with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a ``work that uses the
library''.  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a ``work that uses the Library'' uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
```

linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

@item
As an exception to the Sections above, you may also combine or
link a ``work that uses the Library'' with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License. Also, you must do one
of these things:

@enumerate a
@item
Accompany the work with the complete corresponding
machine-readable source code for the Library including whatever
changes were used in the work (which must be distributed under
Sections 1 and 2 above); and, if the work is an executable linked
with the Library, with the complete machine-readable ``work that
uses the Library'', as object code and/or source code, so that the
user can modify the Library and then relink to produce a modified
executable containing the modified Library. (It is understood
that the user who changes the contents of definitions files in the
Library will not necessarily be able to recompile the application
to use the modified definitions.)

@item
Use a suitable shared library mechanism for linking with the Library. A
suitable mechanism is one that (1) uses at run time a copy of the
library already present on the user's computer system, rather than
copying library functions into the executable, and (2) will operate
properly with a modified version of the library, if the user installs
one, as long as the modified version is interface-compatible with the
version that the work was made with.

@item
Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

```
@item
If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

@item
Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.
@end enumerate

  For an executable, the required form of the ``work that uses the
Library'' must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies the
executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

@item
You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

@enumerate a
@item
Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities.  This must be distributed under the terms of the
Sections above.

@item
Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.
@end enumerate

@item
You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

@item
You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
```

distribute the Library or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

@item
Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.

@item
If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

@item
If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

@item
The Free Software Foundation may publish revised and/or new

```
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number.  If the Library
specifies a version number of this License which applies to it and
``any later version'', you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation.  If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

@item
If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission.  For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this.  Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

@center NO WARRANTY

@item
BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY ``AS IS'' WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU.  SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item
IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.
@end enumerate

@iftex
@heading END OF TERMS AND CONDITIONS
@end iftex
@ifinfo
@center END OF TERMS AND CONDITIONS
@end ifinfo

@page
@appendixsubsec How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
```

```
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
``copyright'' line and a pointer to where the full notice is found.

@smallexample
@var{one line to give the library's name and an idea of what it does.}
Copyright (C) @var{year}  @var{name of author}

This library is free software; you can redistribute it and/or modify it
under the terms of the GNU Lesser General Public License as published by
the Free Software Foundation; either version 2.1 of the License, or (at
your option) any later version.

This library is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301,
USA.
@end smallexample

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a ``copyright disclaimer'' for the library, if
necessary.  Here is a sample; alter the names:

@smallexample
Yoyodyne, Inc., hereby disclaims all copyright interest in the library
`Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990
Ty Coon, President of Vice
@end smallexample

That's all there is to it!
--------------------------------------------------------------------
gcc/libiberty/copysign.c
--------------------------------------------------------------------
#include <ansidecl.h>

#ifdef __IEEE_BIG_ENDIAN

typedef union
{
  double value;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 11;
```

```
    unsigned int fraction0:4;
    unsigned int fraction1:16;
    unsigned int fraction2:16;
    unsigned int fraction3:16;

  } number;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 11;
    unsigned int quiet:1;
    unsigned int function0:3;
    unsigned int function1:16;
    unsigned int function2:16;
    unsigned int function3:16;
  } nan;
  struct
  {
    unsigned long msw;
    unsigned long lsw;
  } parts;
    long aslong[2];
} __ieee_double_shape_type;

#endif

#ifdef __IEEE_LITTLE_ENDIAN

typedef union
{
  double value;
  struct
  {
#ifdef __SMALL_BITFIELDS
    unsigned int fraction3:16;
    unsigned int fraction2:16;
    unsigned int fraction1:16;
    unsigned int fraction0: 4;
#else
    unsigned int fraction1:32;
    unsigned int fraction0:20;
#endif
    unsigned int exponent :11;
    unsigned int sign     : 1;
  } number;
  struct
  {
#ifdef __SMALL_BITFIELDS
    unsigned int function3:16;
    unsigned int function2:16;
    unsigned int function1:16;
    unsigned int function0:3;
#else
    unsigned int function1:32;
    unsigned int function0:19;
#endif
    unsigned int quiet:1;
    unsigned int exponent: 11;
    unsigned int sign : 1;
```

```
  } nan;
  struct
  {
    unsigned long lsw;
    unsigned long msw;
  } parts;

  long aslong[2];

} __ieee_double_shape_type;

#endif

#ifdef __IEEE_BIG_ENDIAN
typedef union
{
  float value;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 8;
    unsigned int fraction0: 7;
    unsigned int fraction1: 16;
  } number;
  struct
  {
    unsigned int sign:1;
    unsigned int exponent:8;
    unsigned int quiet:1;
    unsigned int function0:6;
    unsigned int function1:16;
  } nan;
  long p1;

} __ieee_float_shape_type;
#endif

#ifdef __IEEE_LITTLE_ENDIAN
typedef union
{
  float value;
  struct
  {
    unsigned int fraction0: 7;
    unsigned int fraction1: 16;
    unsigned int exponent: 8;
    unsigned int sign : 1;
  } number;
  struct
  {
    unsigned int function1:16;
    unsigned int function0:6;
    unsigned int quiet:1;
    unsigned int exponent:8;
    unsigned int sign:1;
  } nan;
  long p1;

} __ieee_float_shape_type;
```

```
#endif

#if defined(__IEEE_BIG_ENDIAN) || defined(__IEEE_LITTLE_ENDIAN)

double
copysign (double x, double y)
{
  __ieee_double_shape_type a,b;
  b.value = y;
  a.value = x;
  a.number.sign =b.number.sign;
  return a.value;
}

#else

double
copysign (double x, double y)
{
  if ((x < 0 && y > 0) || (x > 0 && y < 0))
    return -x;
  return x;
}

#endif
----------------------------------------------------------------------
gcc/libiberty/COPYING.LIB
----------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
```

it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you. You must make sure that they, too, receive or can get the source
code. If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

  Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to

encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

                    GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does

and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

```
In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.


  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
```

Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

    e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is

normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


------------------------------------------------------------------
gcc/libgo/go/math/copysign.go
------------------------------------------------------------------
// Copyright 2010 The Go Authors. All rights reserved.
// Use of this source code is governed by a BSD-style
// license that can be found in the LICENSE file.

package math

// Copysign returns a value with the magnitude
// of x and the sign of y.
func Copysign(x, y float64) float64 {
        const sign = 1 << 63
        return Float64frombits(Float64bits(x)&^sign | Float64bits(y)&sign)
}
------------------------------------------------------------------
gcc/libgo/LICENSE
------------------------------------------------------------------
Copyright (c) 2009 The Go Authors. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

   * Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
   * Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following disclaimer
in the documentation and/or other materials provided with the
distribution.
   * Neither the name of Google Inc. nor the names of its
contributors may be used to endorse or promote products derived from
this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
OWNER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
```

3.33 gdb

```
gdb
------------------------------------------------------------------
gdb/readline/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

```
  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gdb/bfd/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
```

have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy. Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies. Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License. If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for

the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any

non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as

```
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
```

specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

```
    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.
```

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a

party means to make such an agreement or commitment not to enforce a
patent against the party.

  If you convey a covered work, knowingly relying on a patent license,
and the Corresponding Source of the work is not available for anyone
to copy, free of charge and under the terms of this License, through a
publicly available network server or other readily accessible means,
then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients. "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have

permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

```
  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
```

Public License instead of this License. But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
---
gdb/COPYING3

                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to

use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of

```
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below.  Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
```

interfaces that do not display Appropriate Legal Notices, your
work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no

```
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed.  Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law.  If additional permissions
```

apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that

any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment

to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any

author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the

```
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gdb/gdb/unittests/optional/cons/copy.cc
----------------------------------------------------------------------
// Copyright (C) 2013-2018 Free Software Foundation, Inc.
//
// This file is part of the GNU ISO C++ Library.  This library is free
// software; you can redistribute it and/or modify it under the
// terms of the GNU General Public License as published by the
// Free Software Foundation; either version 3, or (at your option)
// any later version.

// This library is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.

// You should have received a copy of the GNU General Public License along
// with this library; see the file COPYING3.  If not see
// <http://www.gnu.org/licenses/>.

namespace cons_copy {

struct tracker
{
  tracker(int value) : value(value) { ++count; }
  ~tracker() { --count; }

  tracker(tracker const& other) : value(other.value) { ++count; }
  tracker(tracker&& other) : value(other.value)
```

```
  {
    other.value = -1;
    ++count;
  }

  tracker& operator=(tracker const&) = default;
  tracker& operator=(tracker&&) = default;

  int value;

  static int count;
};

int tracker::count = 0;

struct exception { };

struct throwing_copy
{
  throwing_copy() = default;
  throwing_copy(throwing_copy const&) { throw exception {}; }
};

void test()
{
  // [20.5.4.1] Constructors

  {
    gdb::optional<long> o;
    auto copy = o;
    VERIFY( !copy );
    VERIFY( !o );
  }

  {
    const long val = 0x1234ABCD;
    gdb::optional<long> o { gdb::in_place, val};
    auto copy = o;
    VERIFY( copy );
    VERIFY( *copy == val );
#ifndef GDB_OPTIONAL
    VERIFY( o && o == val );
#endif
  }

  {
    gdb::optional<tracker> o;
    auto copy = o;
    VERIFY( !copy );
    VERIFY( tracker::count == 0 );
    VERIFY( !o );
  }

  {
    gdb::optional<tracker> o { gdb::in_place, 333 };
    auto copy = o;
    VERIFY( copy );
    VERIFY( copy->value == 333 );
    VERIFY( tracker::count == 2 );
```

```
    VERIFY( o && o->value == 333 );
  }

  enum outcome { nothrow, caught, bad_catch };

  {
    outcome result = nothrow;
    gdb::optional<throwing_copy> o;

    try
    {
      auto copy = o;
    }
    catch(exception const&)
    { result = caught; }
    catch(...)
    { result = bad_catch; }

    VERIFY( result == nothrow );
  }

  {
    outcome result = nothrow;
    gdb::optional<throwing_copy> o { gdb::in_place };

    try
    {
      auto copy = o;
    }
    catch(exception const&)
    { result = caught; }
    catch(...)
    { result = bad_catch; }

    VERIFY( result == caught );
  }

  VERIFY( tracker::count == 0 );
}

} // namespace cons_copy
-------------------------------------------------------------------
gdb/gdb/copying.awk
-------------------------------------------------------------------
BEGIN   {
          FS="\"";
          print "/* ==> Do not modify this file!!  " \
                "-*- buffer-read-only: t -*- vi" \
                ":set ro:";
          print "   It is created automatically by copying.awk.";
          print "   Modify copying.awk instead.  <== */";
          print ""
          print "#include \"defs.h\""
          print "#include \"command.h\""
          print "#include \"gdbcmd.h\""
          print ""
          print "static void show_copying_command (const char *, int);"
          print ""
          print "static void show_warranty_command (const char *, int);"
```

```
          print ""
          print "static void";
          print "show_copying_command (const char *ignore, int from_tty)";
          print "{";
        }
NR == 1,/^[     ]*15\. Disclaimer of Warranty\.[        ]*$/    {
          if ($0 ~ /


/)
            {
              printf "  printf_filtered (\"\\n\");\n";
            }
          else if ($0 !~ /^[    ]*15\. Disclaimer of Warranty\.[        ]*$/)
            {
              printf "  printf_filtered (\"";
              for (i = 1; i < NF; i++)
                printf "%s\\\"", $i;
              printf "%s\\n\");\n", $NF;
            }
        }
/^[      ]*15\. Disclaimer of Warranty\.[       ]*$/    {
          print "}";
          print "";
          print "static void";
          print "show_warranty_command (const char *ignore, int from_tty)";
          print "{";
        }
/^[     ]*15\. Disclaimer of Warranty\.[        ]*$/, /^[       ]*END OF TERMS AND CONDITIONS[  ]*$/{
          if (! ($0 ~ /^[       ]*END OF TERMS AND CONDITIONS[  ]*$/))
            {
              printf "  printf_filtered (\"";
              for (i = 1; i < NF; i++)
                printf "%s\\\"", $i;
              printf "%s\\n\");\n", $NF;
            }
        }
END     {
          print "}";
          print "";
          print "void"
          print "_initialize_copying (void)";
          print "{";
          print "  add_cmd (\"copying\", no_set_class, show_copying_command,";
          print "           _(\"Conditions for redistributing copies of GDB.\"),";
          print "           &showlist);";
          print "  add_cmd (\"warranty\", no_set_class, show_warranty_command,";
          print "           _(\"Various kinds of warranty you do not have.\"),";
          print "           &showlist);";
          print "";
          print "  /* For old-timers, allow \"info copying\", etc.  */";
          print "  add_info (\"copying\", show_copying_command,";
          print "            _(\"Conditions for redistributing copies of GDB.\"));";
          print "  add_info (\"warranty\", show_warranty_command,";
          print "            _(\"Various kinds of warranty you do not have.\"));";
          print "}";
        }
------------------------------------------------------------------------
gdb/gdb/COPYING
------------------------------------------------------------------------
```

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for software and other kinds of works.

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official

standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

  When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

    c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

  A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work,

```
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.
```

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option

```
remove any additional permissions from that copy, or from any part of
it.  (Additional permissions may be written to require their own
removal in certain cases when you modify the work.)  You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).
```

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily

for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program.  If not, see <http://www.gnu.org/licenses/>.
```

```
Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
--------------------------------------------------------------------
gdb/gdb/copyright.py
--------------------------------------------------------------------
#! /usr/bin/env python

# Copyright (C) 2011-2018 Free Software Foundation, Inc.
#
# This file is part of GDB.
#
# This program is free software; you can redistribute it and/or modify
# it under the terms of the GNU General Public License as published by
# the Free Software Foundation; either version 3 of the License, or
# (at your option) any later version.
#
# This program is distributed in the hope that it will be useful,
# but WITHOUT ANY WARRANTY; without even the implied warranty of
# MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
# GNU General Public License for more details.
#
# You should have received a copy of the GNU General Public License
# along with this program.  If not, see <http://www.gnu.org/licenses/>.

"""copyright.py

This script updates the list of years in the copyright notices in
most files maintained by the GDB project.

Usage: cd src/gdb && python copyright.py

Always review the output of this script before committing it!
A useful command to review the output is:
    % filterdiff -x \*.c -x \*.cc -x \*.h -x \*.exp updates.diff
This removes the bulk of the changes which are most likely to be correct.
"""
```

```
import datetime
import os
import os.path
import subprocess


def get_update_list():
    """Return the list of files to update.

    Assumes that the current working directory when called is the root
    of the GDB source tree (NOT the gdb/ subdirectory!).  The names of
    the files are relative to that root directory.
    """
    result = []
    for gdb_dir in ('gdb', 'sim', 'include/gdb'):
        for root, dirs, files in os.walk(gdb_dir, topdown=True):
            for dirname in dirs:
                reldirname = "%s/%s" % (root, dirname)
                if (dirname in EXCLUDE_ALL_LIST
                    or reldirname in EXCLUDE_LIST
                    or reldirname in NOT_FSF_LIST
                    or reldirname in BY_HAND):
                    # Prune this directory from our search list.
                    dirs.remove(dirname)
            for filename in files:
                relpath = "%s/%s" % (root, filename)
                if (filename in EXCLUDE_ALL_LIST
                    or relpath in EXCLUDE_LIST
                    or relpath in NOT_FSF_LIST
                    or relpath in BY_HAND):
                    # Ignore this file.
                    pass
                else:
                    result.append(relpath)
    return result


def update_files(update_list):
    """Update the copyright header of the files in the given list.

    We use gnulib's update-copyright script for that.
    """
    # We want to use year intervals in the copyright notices, and
    # all years should be collapsed to one single year interval,
    # even if there are "holes" in the list of years found in the
    # original copyright notice (OK'ed by the FSF, case [gnu.org #719834]).
    os.environ['UPDATE_COPYRIGHT_USE_INTERVALS'] = '2'

    # Perform the update, and save the output in a string.
    update_cmd = ['bash', 'gdb/gnulib/import/extra/update-copyright']
    update_cmd += update_list

    p = subprocess.Popen(update_cmd, stdout=subprocess.PIPE,
                         stderr=subprocess.STDOUT)
    update_out = p.communicate()[0]

    # Process the output.  Typically, a lot of files do not have
    # a copyright notice :-(.  The update-copyright script prints
```

```
    # a well defined warning when it did not find the copyright notice.
    # For each of those, do a sanity check and see if they may in fact
    # have one.  For the files that are found not to have one, we filter
    # the line out from the output, since there is nothing more to do,
    # short of looking at each file and seeing which notice is appropriate.
    # Too much work! (~4,000 files listed as of 2012-01-03).
    update_out = update_out.splitlines()
    warning_string = ': warning: copyright statement not found'
    warning_len = len(warning_string)

    for line in update_out:
        if line.endswith('\n'):
            line = line[:-1]
        if line.endswith(warning_string):
            filename = line[:-warning_len]
            if may_have_copyright_notice(filename):
                print line
        else:
            # Unrecognized file format. !?!
            print "*** " + line


def may_have_copyright_notice(filename):
    """Check that the given file does not seem to have a copyright notice.

    The filename is relative to the root directory.
    This function assumes that the current working directory is that root
    directory.

    The algorigthm is fairly crude, meaning that it might return
    some false positives.  I do not think it will return any false
    negatives...  We might improve this function to handle more
    complex cases later...
    """
    # For now, it may have a copyright notice if we find the word
    # "Copyright" at the (reasonable) start of the given file, say
    # 50 lines...
    MAX_LINES = 50

    fd = open(filename)

    lineno = 1
    for line in fd:
        if 'Copyright' in line:
            return True
        lineno += 1
        if lineno > 50:
            return False
    return False


def main ():
    """The main subprogram."""
    if not os.path.isfile("gnulib/import/extra/update-copyright"):
        print "Error: This script must be called from the gdb directory."
    root_dir = os.path.dirname(os.getcwd())
    os.chdir(root_dir)

    update_list = get_update_list()
```

```
    update_files (update_list)

    # Remind the user that some files need to be updated by HAND...

    if MULTIPLE_COPYRIGHT_HEADERS:
        print
        print("\033[31m"
              "REMINDER: Multiple copyright headers must be updated by hand:"
              "\033[0m")
        for filename in MULTIPLE_COPYRIGHT_HEADERS:
            print "  ", filename

    if BY_HAND:
        print
        print "\033[31mREMINDER: The following files must be updated by hand." \
              "\033[0m"
        for filename in BY_HAND:
            print "  ", filename

################################################################################
#
# Some constants, placed at the end because they take up a lot of room.
# The actual value of these constants is not significant to the understanding
# of the script.
#
################################################################################

# Files which should not be modified, either because they are
# generated, non-FSF, or otherwise special (e.g. license text,
# or test cases which must be sensitive to line numbering).
#
# Filenames are relative to the root directory.
EXCLUDE_LIST = (
    'gdb/nat/glibc_thread_db.h',
    'gdb/CONTRIBUTE',
    'gdb/gnulib/import'
)

# Files which should not be modified, either because they are
# generated, non-FSF, or otherwise special (e.g. license text,
# or test cases which must be sensitive to line numbering).
#
# Matches any file or directory name anywhere.  Use with caution.
# This is mostly for files that can be found in multiple directories.
# Eg: We want all files named COPYING to be left untouched.

EXCLUDE_ALL_LIST = (
    "COPYING", "COPYING.LIB", "CVS", "configure", "copying.c",
    "fdl.texi", "gpl.texi", "aclocal.m4",
)

# The list of files to update by hand.
BY_HAND = (
    # Nothing at the moment :-).
)

# Files containing multiple copyright headers.  This script is only
# fixing the first one it finds, so we need to finish the update
# by hand.
```

```
MULTIPLE_COPYRIGHT_HEADERS = (
    "gdb/doc/gdb.texinfo",
    "gdb/doc/refcard.tex",
    "gdb/gdbarch.sh",
)

# The list of file which have a copyright, but not head by the FSF.
# Filenames are relative to the root directory.
NOT_FSF_LIST = (
    "gdb/exc_request.defs",
    "gdb/gdbtk",
    "gdb/testsuite/gdb.gdbtk/",
    "sim/arm/armemu.h", "sim/arm/armos.c", "sim/arm/gdbhost.c",
    "sim/arm/dbg_hif.h", "sim/arm/dbg_conf.h", "sim/arm/communicate.h",
    "sim/arm/armos.h", "sim/arm/armcopro.c", "sim/arm/armemu.c",
    "sim/arm/kid.c", "sim/arm/thumbemu.c", "sim/arm/armdefs.h",
    "sim/arm/armopts.h", "sim/arm/dbg_cp.h", "sim/arm/dbg_rdi.h",
    "sim/arm/parent.c", "sim/arm/armsupp.c", "sim/arm/armrdi.c",
    "sim/arm/bag.c", "sim/arm/armvirt.c", "sim/arm/main.c", "sim/arm/bag.h",
    "sim/arm/communicate.c", "sim/arm/gdbhost.h", "sim/arm/armfpe.h",
    "sim/arm/arminit.c",
    "sim/common/cgen-fpu.c", "sim/common/cgen-fpu.h",
    "sim/common/cgen-accfp.c",
    "sim/mips/m16run.c", "sim/mips/sim-main.c",
    "sim/moxie/moxie-gdb.dts",
    # Not a single file in sim/ppc/ appears to be copyright FSF :-(.
    "sim/ppc/filter.h", "sim/ppc/gen-support.h", "sim/ppc/ld-insn.h",
    "sim/ppc/hw_sem.c", "sim/ppc/hw_disk.c", "sim/ppc/idecode_branch.h",
    "sim/ppc/sim-endian.h", "sim/ppc/table.c", "sim/ppc/hw_core.c",
    "sim/ppc/gen-support.c", "sim/ppc/gen-semantics.h", "sim/ppc/cpu.h",
    "sim/ppc/sim_callbacks.h", "sim/ppc/RUN", "sim/ppc/Makefile.in",
    "sim/ppc/emul_chirp.c", "sim/ppc/hw_nvram.c", "sim/ppc/dc-test.01",
    "sim/ppc/hw_phb.c", "sim/ppc/hw_eeprom.c", "sim/ppc/bits.h",
    "sim/ppc/hw_vm.c", "sim/ppc/cap.h", "sim/ppc/os_emul.h",
    "sim/ppc/options.h", "sim/ppc/gen-idecode.c", "sim/ppc/filter.c",
    "sim/ppc/corefile-n.h", "sim/ppc/std-config.h", "sim/ppc/ld-decode.h",
    "sim/ppc/filter_filename.h", "sim/ppc/hw_shm.c",
    "sim/ppc/pk_disklabel.c", "sim/ppc/dc-simple", "sim/ppc/misc.h",
    "sim/ppc/device_table.h", "sim/ppc/ld-insn.c", "sim/ppc/inline.c",
    "sim/ppc/emul_bugapi.h", "sim/ppc/hw_cpu.h", "sim/ppc/debug.h",
    "sim/ppc/hw_ide.c", "sim/ppc/debug.c", "sim/ppc/gen-itable.h",
    "sim/ppc/interrupts.c", "sim/ppc/hw_glue.c", "sim/ppc/emul_unix.c",
    "sim/ppc/sim_calls.c", "sim/ppc/dc-complex", "sim/ppc/ld-cache.c",
    "sim/ppc/registers.h", "sim/ppc/dc-test.02", "sim/ppc/options.c",
    "sim/ppc/igen.h", "sim/ppc/registers.c", "sim/ppc/device.h",
    "sim/ppc/emul_chirp.h", "sim/ppc/hw_register.c", "sim/ppc/hw_init.c",
    "sim/ppc/sim-endian-n.h", "sim/ppc/filter_filename.c",
    "sim/ppc/bits.c", "sim/ppc/idecode_fields.h", "sim/ppc/hw_memory.c",
    "sim/ppc/misc.c", "sim/ppc/double.c", "sim/ppc/psim.h",
    "sim/ppc/hw_trace.c", "sim/ppc/emul_netbsd.h", "sim/ppc/psim.c",
    "sim/ppc/ppc-instructions", "sim/ppc/tree.h", "sim/ppc/README",
    "sim/ppc/gen-icache.h", "sim/ppc/gen-model.h", "sim/ppc/ld-cache.h",
    "sim/ppc/mon.c", "sim/ppc/corefile.h", "sim/ppc/vm.c",
    "sim/ppc/INSTALL", "sim/ppc/gen-model.c", "sim/ppc/hw_cpu.c",
    "sim/ppc/corefile.c", "sim/ppc/hw_opic.c", "sim/ppc/gen-icache.c",
    "sim/ppc/events.h", "sim/ppc/os_emul.c", "sim/ppc/emul_generic.c",
    "sim/ppc/main.c", "sim/ppc/hw_com.c", "sim/ppc/gen-semantics.c",
    "sim/ppc/emul_bugapi.c", "sim/ppc/device.c", "sim/ppc/emul_generic.h",
    "sim/ppc/tree.c", "sim/ppc/mon.h", "sim/ppc/interrupts.h",
```

```
    "sim/ppc/cap.c", "sim/ppc/cpu.c", "sim/ppc/hw_phb.h",
    "sim/ppc/device_table.c", "sim/ppc/lf.c", "sim/ppc/lf.c",
    "sim/ppc/dc-stupid", "sim/ppc/hw_pal.c", "sim/ppc/ppc-spr-table",
    "sim/ppc/emul_unix.h", "sim/ppc/words.h", "sim/ppc/basics.h",
    "sim/ppc/hw_htab.c", "sim/ppc/lf.h", "sim/ppc/ld-decode.c",
    "sim/ppc/sim-endian.c", "sim/ppc/gen-itable.c",
    "sim/ppc/idecode_expression.h", "sim/ppc/table.h", "sim/ppc/dgen.c",
    "sim/ppc/events.c", "sim/ppc/gen-idecode.h", "sim/ppc/emul_netbsd.c",
    "sim/ppc/igen.c", "sim/ppc/vm_n.h", "sim/ppc/vm.h",
    "sim/ppc/hw_iobus.c", "sim/ppc/inline.h",
    "sim/testsuite/sim/bfin/s21.s", "sim/testsuite/sim/mips/mips32-dsp2.s",
)

if __name__ == "__main__":
    main()

--------------------------------------------------------------------
gdb/gdb/copying.c
--------------------------------------------------------------------
/* ==> Do not modify this file!!  -*- buffer-read-only: t -*- vi:set ro:
   It is created automatically by copying.awk.
   Modify copying.awk instead.  <== */

#include "defs.h"
#include "command.h"
#include "gdbcmd.h"

static void show_copying_command (const char *, int);

static void show_warranty_command (const char *, int);

static void
show_copying_command (const char *ignore, int from_tty)
{
  printf_filtered ("                    GNU GENERAL PUBLIC LICENSE\n");
  printf_filtered ("                       Version 3, 29 June 2007\n");
  printf_filtered ("\n");
  printf_filtered (" Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>\n");
  printf_filtered (" Everyone is permitted to copy and distribute verbatim copies\n");
  printf_filtered (" of this license document, but changing it is not allowed.\n");
  printf_filtered ("\n");
  printf_filtered ("                            Preamble\n");
  printf_filtered ("\n");
  printf_filtered ("  The GNU General Public License is a free, copyleft license for\n");
  printf_filtered ("software and other kinds of works.\n");
  printf_filtered ("\n");
  printf_filtered ("  The licenses for most software and other practical works are designed\n");
  printf_filtered ("to take away your freedom to share and change the works.  By contrast,\n");
  printf_filtered ("the GNU General Public License is intended to guarantee your freedom to\n");
  printf_filtered ("share and change all versions of a program--to make sure it remains free\n");
  printf_filtered ("software for all its users.  We, the Free Software Foundation, use the\n");
  printf_filtered ("GNU General Public License for most of our software; it applies also to\n");
  printf_filtered ("any other work released this way by its authors.  You can apply it to\n");
  printf_filtered ("your programs, too.\n");
  printf_filtered ("\n");
  printf_filtered ("  When we speak of free software, we are referring to freedom, not\n");
  printf_filtered ("price.  Our General Public Licenses are designed to make sure that you\n");
  printf_filtered ("have the freedom to distribute copies of free software (and charge for\n");
  printf_filtered ("them if you wish), that you receive source code or can get it if you\n");
```

```
printf_filtered ("want it, that you can change the software or use pieces of it in new\n");
printf_filtered ("free programs, and that you know you can do these things.\n");
printf_filtered ("\n");
printf_filtered ("  To protect your rights, we need to prevent others from denying you\n");
printf_filtered ("these rights or asking you to surrender the rights.  Therefore, you have\n");
printf_filtered ("certain responsibilities if you distribute copies of the software, or if\n");
printf_filtered ("you modify it: responsibilities to respect the freedom of others.\n");
printf_filtered ("\n");
printf_filtered ("  For example, if you distribute copies of such a program, whether\n");
printf_filtered ("gratis or for a fee, you must pass on to the recipients the same\n");
printf_filtered ("freedoms that you received.  You must make sure that they, too, receive\n");
printf_filtered ("or can get the source code.  And you must show them these terms so they\n");
printf_filtered ("know their rights.\n");
printf_filtered ("\n");
printf_filtered ("  Developers that use the GNU GPL protect your rights with two steps:\n");
printf_filtered ("(1) assert copyright on the software, and (2) offer you this License\n");
printf_filtered ("giving you legal permission to copy, distribute and/or modify it.\n");
printf_filtered ("\n");
printf_filtered ("  For the developers' and authors' protection, the GPL clearly explains\n");
printf_filtered ("that there is no warranty for this free software.  For both users' and\n");
printf_filtered ("authors' sake, the GPL requires that modified versions be marked as\n");
printf_filtered ("changed, so that their problems will not be attributed erroneously to\n");
printf_filtered ("authors of previous versions.\n");
printf_filtered ("\n");
printf_filtered ("  Some devices are designed to deny users access to install or run\n");
printf_filtered ("modified versions of the software inside them, although the manufacturer\n");
printf_filtered ("can do so.  This is fundamentally incompatible with the aim of\n");
printf_filtered ("protecting users' freedom to change the software.  The systematic\n");
printf_filtered ("pattern of such abuse occurs in the area of products for individuals to\n");
printf_filtered ("use, which is precisely where it is most unacceptable.  Therefore, we\n");
printf_filtered ("have designed this version of the GPL to prohibit the practice for those\n");
printf_filtered ("products.  If such problems arise substantially in other domains, we\n");
printf_filtered ("stand ready to extend this provision to those domains in future versions\n");
printf_filtered ("of the GPL, as needed to protect the freedom of users.\n");
printf_filtered ("\n");
printf_filtered ("  Finally, every program is threatened constantly by software patents.\n");
printf_filtered ("States should not allow patents to restrict development and use of\n");
printf_filtered ("software on general-purpose computers, but in those that do, we wish to\n");
printf_filtered ("avoid the special danger that patents applied to a free program could\n");
printf_filtered ("make it effectively proprietary.  To prevent this, the GPL assures that\n");
printf_filtered ("patents cannot be used to render the program non-free.\n");
printf_filtered ("\n");
printf_filtered ("  The precise terms and conditions for copying, distribution and\n");
printf_filtered ("modification follow.\n");
printf_filtered ("\n");
printf_filtered ("                       TERMS AND CONDITIONS\n");
printf_filtered ("\n");
printf_filtered ("  0. Definitions.\n");
printf_filtered ("\n");
printf_filtered ("  \"This License\" refers to version 3 of the GNU General Public License.\n");
printf_filtered ("\n");
printf_filtered ("  \"Copyright\" also means copyright-like laws that apply to other kinds of\n");
printf_filtered ("works, such as semiconductor masks.\n");
printf_filtered ("\n");
printf_filtered ("  \"The Program\" refers to any copyrightable work licensed under this\n");
printf_filtered ("License.  Each licensee is addressed as \"you\".  \"Licensees\" and\n");
printf_filtered ("\"recipients\" may be individuals or organizations.\n");
printf_filtered ("\n");
printf_filtered ("  To \"modify\" a work means to copy from or adapt all or part of the work\n");
```

```
printf_filtered ("in a fashion requiring copyright permission, other than the making of an\n");
printf_filtered ("exact copy.  The resulting work is called a \"modified version\" of the\n");
printf_filtered ("earlier work or a work \"based on\" the earlier work.\n");
printf_filtered ("\n");
printf_filtered ("  A \"covered work\" means either the unmodified Program or a work based\n");
printf_filtered ("on the Program.\n");
printf_filtered ("\n");
printf_filtered ("  To \"propagate\" a work means to do anything with it that, without\n");
printf_filtered ("permission, would make you directly or secondarily liable for\n");
printf_filtered ("infringement under applicable copyright law, except executing it on a\n");
printf_filtered ("computer or modifying a private copy.  Propagation includes copying,\n");
printf_filtered ("distribution (with or without modification), making available to the\n");
printf_filtered ("public, and in some countries other activities as well.\n");
printf_filtered ("\n");
printf_filtered ("  To \"convey\" a work means any kind of propagation that enables other\n");
printf_filtered ("parties to make or receive copies.  Mere interaction with a user through\n");
printf_filtered ("a computer network, with no transfer of a copy, is not conveying.\n");
printf_filtered ("\n");
printf_filtered ("  An interactive user interface displays \"Appropriate Legal Notices\"\n");
printf_filtered ("to the extent that it includes a convenient and prominently visible\n");
printf_filtered ("feature that (1) displays an appropriate copyright notice, and (2)\n");
printf_filtered ("tells the user that there is no warranty for the work (except to the\n");
printf_filtered ("extent that warranties are provided), that licensees may convey the\n");
printf_filtered ("work under this License, and how to view a copy of this License.  If\n");
printf_filtered ("the interface presents a list of user commands or options, such as a\n");
printf_filtered ("menu, a prominent item in the list meets this criterion.\n");
printf_filtered ("\n");
printf_filtered ("  1. Source Code.\n");
printf_filtered ("\n");
printf_filtered ("  The \"source code\" for a work means the preferred form of the work\n");
printf_filtered ("for making modifications to it.  \"Object code\" means any non-source\n");
printf_filtered ("form of a work.\n");
printf_filtered ("\n");
printf_filtered ("  A \"Standard Interface\" means an interface that either is an official\n");
printf_filtered ("standard defined by a recognized standards body, or, in the case of\n");
printf_filtered ("interfaces specified for a particular programming language, one that\n");
printf_filtered ("is widely used among developers working in that language.\n");
printf_filtered ("\n");
printf_filtered ("  The \"System Libraries\" of an executable work include anything, other\n");
printf_filtered ("than the work as a whole, that (a) is included in the normal form of\n");
printf_filtered ("packaging a Major Component, but which is not part of that Major\n");
printf_filtered ("Component, and (b) serves only to enable use of the work with that\n");
printf_filtered ("Major Component, or to implement a Standard Interface for which an\n");
printf_filtered ("implementation is available to the public in source code form.  A\n");
printf_filtered ("\"Major Component\", in this context, means a major essential component\n");
printf_filtered ("(kernel, window system, and so on) of the specific operating system\n");
printf_filtered ("(if any) on which the executable work runs, or a compiler used to\n");
printf_filtered ("produce the work, or an object code interpreter used to run it.\n");
printf_filtered ("\n");
printf_filtered ("  The \"Corresponding Source\" for a work in object code form means all\n");
printf_filtered ("the source code needed to generate, install, and (for an executable\n");
printf_filtered ("work) run the object code and to modify the work, including scripts to\n");
printf_filtered ("control those activities.  However, it does not include the work's\n");
printf_filtered ("System Libraries, or general-purpose tools or generally available free\n");
printf_filtered ("programs which are used unmodified in performing those activities but\n");
printf_filtered ("which are not part of the work.  For example, Corresponding Source\n");
printf_filtered ("includes interface definition files associated with source files for\n");
printf_filtered ("the work, and the source code for shared libraries and dynamically\n");
printf_filtered ("linked subprograms that the work is specifically designed to require,\n");
```

```
printf_filtered ("such as by intimate data communication or control flow between those\n");
printf_filtered ("subprograms and other parts of the work.\n");
printf_filtered ("\n");
printf_filtered ("  The Corresponding Source need not include anything that users\n");
printf_filtered ("can regenerate automatically from other parts of the Corresponding\n");
printf_filtered ("Source.\n");
printf_filtered ("\n");
printf_filtered ("  The Corresponding Source for a work in source code form is that\n");
printf_filtered ("same work.\n");
printf_filtered ("\n");
printf_filtered ("  2. Basic Permissions.\n");
printf_filtered ("\n");
printf_filtered ("  All rights granted under this License are granted for the term of\n");
printf_filtered ("copyright on the Program, and are irrevocable provided the stated\n");
printf_filtered ("conditions are met.  This License explicitly affirms your unlimited\n");
printf_filtered ("permission to run the unmodified Program.  The output from running a\n");
printf_filtered ("covered work is covered by this License only if the output, given its\n");
printf_filtered ("content, constitutes a covered work.  This License acknowledges your\n");
printf_filtered ("rights of fair use or other equivalent, as provided by copyright law.\n");
printf_filtered ("\n");
printf_filtered ("  You may make, run and propagate covered works that you do not\n");
printf_filtered ("convey, without conditions so long as your license otherwise remains\n");
printf_filtered ("in force.  You may convey covered works to others for the sole purpose\n");
printf_filtered ("of having them make modifications exclusively for you, or provide you\n");
printf_filtered ("with facilities for running those works, provided that you comply with\n");
printf_filtered ("the terms of this License in conveying all material for which you do\n");
printf_filtered ("not control copyright.  Those thus making or running the covered works\n");
printf_filtered ("for you must do so exclusively on your behalf, under your direction\n");
printf_filtered ("and control, on terms that prohibit them from making any copies of\n");
printf_filtered ("your copyrighted material outside their relationship with you.\n");
printf_filtered ("\n");
printf_filtered ("  Conveying under any other circumstances is permitted solely under\n");
printf_filtered ("the conditions stated below.  Sublicensing is not allowed; section 10\n");
printf_filtered ("makes it unnecessary.\n");
printf_filtered ("\n");
printf_filtered ("  3. Protecting Users' Legal Rights From Anti-Circumvention Law.\n");
printf_filtered ("\n");
printf_filtered ("  No covered work shall be deemed part of an effective technological\n");
printf_filtered ("measure under any applicable law fulfilling obligations under article\n");
printf_filtered ("11 of the WIPO copyright treaty adopted on 20 December 1996, or\n");
printf_filtered ("similar laws prohibiting or restricting circumvention of such\n");
printf_filtered ("measures.\n");
printf_filtered ("\n");
printf_filtered ("  When you convey a covered work, you waive any legal power to forbid\n");
printf_filtered ("circumvention of technological measures to the extent such circumvention\n");
printf_filtered ("is effected by exercising rights under this License with respect to\n");
printf_filtered ("the covered work, and you disclaim any intention to limit operation or\n");
printf_filtered ("modification of the work as a means of enforcing, against the work's\n");
printf_filtered ("users, your or third parties' legal rights to forbid circumvention of\n");
printf_filtered ("technological measures.\n");
printf_filtered ("\n");
printf_filtered ("  4. Conveying Verbatim Copies.\n");
printf_filtered ("\n");
printf_filtered ("  You may convey verbatim copies of the Program's source code as you\n");
printf_filtered ("receive it, in any medium, provided that you conspicuously and\n");
printf_filtered ("appropriately publish on each copy an appropriate copyright notice;\n");
printf_filtered ("keep intact all notices stating that this License and any\n");
printf_filtered ("non-permissive terms added in accord with section 7 apply to the code;\n");
printf_filtered ("keep intact all notices of the absence of any warranty; and give all\n");
```

```
printf_filtered ("recipients a copy of this License along with the Program.\n");
printf_filtered ("\n");
printf_filtered ("  You may charge any price or no price for each copy that you convey,\n");
printf_filtered ("and you may offer support or warranty protection for a fee.\n");
printf_filtered ("\n");
printf_filtered ("  5. Conveying Modified Source Versions.\n");
printf_filtered ("\n");
printf_filtered ("  You may convey a work based on the Program, or the modifications to\n");
printf_filtered ("produce it from the Program, in the form of source code under the\n");
printf_filtered ("terms of section 4, provided that you also meet all of these conditions:\n");
printf_filtered ("\n");
printf_filtered ("    a) The work must carry prominent notices stating that you modified\n");
printf_filtered ("    it, and giving a relevant date.\n");
printf_filtered ("\n");
printf_filtered ("    b) The work must carry prominent notices stating that it is\n");
printf_filtered ("    released under this License and any conditions added under section\n");
printf_filtered ("    7.  This requirement modifies the requirement in section 4 to\n");
printf_filtered ("    \"keep intact all notices\".\n");
printf_filtered ("\n");
printf_filtered ("    c) You must license the entire work, as a whole, under this\n");
printf_filtered ("    License to anyone who comes into possession of a copy.  This\n");
printf_filtered ("    License will therefore apply, along with any applicable section 7\n");
printf_filtered ("    additional terms, to the whole of the work, and all its parts,\n");
printf_filtered ("    regardless of how they are packaged.  This License gives no\n");
printf_filtered ("    permission to license the work in any other way, but it does not\n");
printf_filtered ("    invalidate such permission if you have separately received it.\n");
printf_filtered ("\n");
printf_filtered ("    d) If the work has interactive user interfaces, each must display\n");
printf_filtered ("    Appropriate Legal Notices; however, if the Program has interactive\n");
printf_filtered ("    interfaces that do not display Appropriate Legal Notices, your\n");
printf_filtered ("    work need not make them do so.\n");
printf_filtered ("\n");
printf_filtered ("  A compilation of a covered work with other separate and independent\n");
printf_filtered ("works, which are not by their nature extensions of the covered work,\n");
printf_filtered ("and which are not combined with it such as to form a larger program,\n");
printf_filtered ("in or on a volume of a storage or distribution medium, is called an\n");
printf_filtered ("\"aggregate\" if the compilation and its resulting copyright are not\n");
printf_filtered ("used to limit the access or legal rights of the compilation's users\n");
printf_filtered ("beyond what the individual works permit.  Inclusion of a covered work\n");
printf_filtered ("in an aggregate does not cause this License to apply to the other\n");
printf_filtered ("parts of the aggregate.\n");
printf_filtered ("\n");
printf_filtered ("  6. Conveying Non-Source Forms.\n");
printf_filtered ("\n");
printf_filtered ("  You may convey a covered work in object code form under the terms\n");
printf_filtered ("of sections 4 and 5, provided that you also convey the\n");
printf_filtered ("machine-readable Corresponding Source under the terms of this License,\n");
printf_filtered ("in one of these ways:\n");
printf_filtered ("\n");
printf_filtered ("    a) Convey the object code in, or embodied in, a physical product\n");
printf_filtered ("    (including a physical distribution medium), accompanied by the\n");
printf_filtered ("    Corresponding Source fixed on a durable physical medium\n");
printf_filtered ("    customarily used for software interchange.\n");
printf_filtered ("\n");
printf_filtered ("    b) Convey the object code in, or embodied in, a physical product\n");
printf_filtered ("    (including a physical distribution medium), accompanied by a\n");
printf_filtered ("    written offer, valid for at least three years and valid for as\n");
printf_filtered ("    long as you offer spare parts or customer support for that product\n");
printf_filtered ("    model, to give anyone who possesses the object code either (1) a\n");
```

```
printf_filtered ("    copy of the Corresponding Source for all the software in the\n");
printf_filtered ("    product that is covered by this License, on a durable physical\n");
printf_filtered ("    medium customarily used for software interchange, for a price no\n");
printf_filtered ("    more than your reasonable cost of physically performing this\n");
printf_filtered ("    conveying of source, or (2) access to copy the\n");
printf_filtered ("    Corresponding Source from a network server at no charge.\n");
printf_filtered ("\n");
printf_filtered ("    c) Convey individual copies of the object code with a copy of the\n");
printf_filtered ("    written offer to provide the Corresponding Source.  This\n");
printf_filtered ("    alternative is allowed only occasionally and noncommercially, and\n");
printf_filtered ("    only if you received the object code with such an offer, in accord\n");
printf_filtered ("    with subsection 6b.\n");
printf_filtered ("\n");
printf_filtered ("    d) Convey the object code by offering access from a designated\n");
printf_filtered ("    place (gratis or for a charge), and offer equivalent access to the\n");
printf_filtered ("    Corresponding Source in the same way through the same place at no\n");
printf_filtered ("    further charge.  You need not require recipients to copy the\n");
printf_filtered ("    Corresponding Source along with the object code.  If the place to\n");
printf_filtered ("    copy the object code is a network server, the Corresponding Source\n");
printf_filtered ("    may be on a different server (operated by you or a third party)\n");
printf_filtered ("    that supports equivalent copying facilities, provided you maintain\n");
printf_filtered ("    clear directions next to the object code saying where to find the\n");
printf_filtered ("    Corresponding Source.  Regardless of what server hosts the\n");
printf_filtered ("    Corresponding Source, you remain obligated to ensure that it is\n");
printf_filtered ("    available for as long as needed to satisfy these requirements.\n");
printf_filtered ("\n");
printf_filtered ("    e) Convey the object code using peer-to-peer transmission, provided\n");
printf_filtered ("    you inform other peers where the object code and Corresponding\n");
printf_filtered ("    Source of the work are being offered to the general public at no\n");
printf_filtered ("    charge under subsection 6d.\n");
printf_filtered ("\n");
printf_filtered ("  A separable portion of the object code, whose source code is excluded\n");
printf_filtered ("from the Corresponding Source as a System Library, need not be\n");
printf_filtered ("included in conveying the object code work.\n");
printf_filtered ("\n");
printf_filtered ("  A \"User Product\" is either (1) a \"consumer product\", which means any\n");
printf_filtered ("tangible personal property which is normally used for personal, family,\n");
printf_filtered ("or household purposes, or (2) anything designed or sold for incorporation\n");
printf_filtered ("into a dwelling.  In determining whether a product is a consumer product,\n");
printf_filtered ("doubtful cases shall be resolved in favor of coverage.  For a particular\n");
printf_filtered ("product received by a particular user, \"normally used\" refers to a\n");
printf_filtered ("typical or common use of that class of product, regardless of the status\n");
printf_filtered ("of the particular user or of the way in which the particular user\n");
printf_filtered ("actually uses, or expects or is expected to use, the product.  A product\n");
printf_filtered ("is a consumer product regardless of whether the product has substantial\n");
printf_filtered ("commercial, industrial or non-consumer uses, unless such uses represent\n");
printf_filtered ("the only significant mode of use of the product.\n");
printf_filtered ("\n");
printf_filtered ("  \"Installation Information\" for a User Product means any methods,\n");
printf_filtered ("procedures, authorization keys, or other information required to install\n");
printf_filtered ("and execute modified versions of a covered work in that User Product from\n");
printf_filtered ("a modified version of its Corresponding Source.  The information must\n");
printf_filtered ("suffice to ensure that the continued functioning of the modified object\n");
printf_filtered ("code is in no case prevented or interfered with solely because\n");
printf_filtered ("modification has been made.\n");
printf_filtered ("\n");
printf_filtered ("  If you convey an object code work under this section in, or with, or\n");
printf_filtered ("specifically for use in, a User Product, and the conveying occurs as\n");
printf_filtered ("part of a transaction in which the right of possession and use of the\n");
```

```
printf_filtered ("User Product is transferred to the recipient in perpetuity or for a\n");
printf_filtered ("fixed term (regardless of how the transaction is characterized), the\n");
printf_filtered ("Corresponding Source conveyed under this section must be accompanied\n");
printf_filtered ("by the Installation Information.  But this requirement does not apply\n");
printf_filtered ("if neither you nor any third party retains the ability to install\n");
printf_filtered ("modified object code on the User Product (for example, the work has\n");
printf_filtered ("been installed in ROM).\n");
printf_filtered ("\n");
printf_filtered ("  The requirement to provide Installation Information does not include a\n");
printf_filtered ("requirement to continue to provide support service, warranty, or updates\n");
printf_filtered ("for a work that has been modified or installed by the recipient, or for\n");
printf_filtered ("the User Product in which it has been modified or installed.  Access to a\n");
printf_filtered ("network may be denied when the modification itself materially and\n");
printf_filtered ("adversely affects the operation of the network or violates the rules and\n");
printf_filtered ("protocols for communication across the network.\n");
printf_filtered ("\n");
printf_filtered ("  Corresponding Source conveyed, and Installation Information provided,\n");
printf_filtered ("in accord with this section must be in a format that is publicly\n");
printf_filtered ("documented (and with an implementation available to the public in\n");
printf_filtered ("source code form), and must require no special password or key for\n");
printf_filtered ("unpacking, reading or copying.\n");
printf_filtered ("\n");
printf_filtered ("  7. Additional Terms.\n");
printf_filtered ("\n");
printf_filtered ("  \"Additional permissions\" are terms that supplement the terms of this\n");
printf_filtered ("License by making exceptions from one or more of its conditions.\n");
printf_filtered ("Additional permissions that are applicable to the entire Program shall\n");
printf_filtered ("be treated as though they were included in this License, to the extent\n");
printf_filtered ("that they are valid under applicable law.  If additional permissions\n");
printf_filtered ("apply only to part of the Program, that part may be used separately\n");
printf_filtered ("under those permissions, but the entire Program remains governed by\n");
printf_filtered ("this License without regard to the additional permissions.\n");
printf_filtered ("\n");
printf_filtered ("  When you convey a copy of a covered work, you may at your option\n");
printf_filtered ("remove any additional permissions from that copy, or from any part of\n");
printf_filtered ("it.  (Additional permissions may be written to require their own\n");
printf_filtered ("removal in certain cases when you modify the work.)  You may place\n");
printf_filtered ("additional permissions on material, added by you to a covered work,\n");
printf_filtered ("for which you have or can give appropriate copyright permission.\n");
printf_filtered ("\n");
printf_filtered ("  Notwithstanding any other provision of this License, for material you\n");
printf_filtered ("add to a covered work, you may (if authorized by the copyright holders of\n");
printf_filtered ("that material) supplement the terms of this License with terms:\n");
printf_filtered ("\n");
printf_filtered ("    a) Disclaiming warranty or limiting liability differently from the\n");
printf_filtered ("    terms of sections 15 and 16 of this License; or\n");
printf_filtered ("\n");
printf_filtered ("    b) Requiring preservation of specified reasonable legal notices or\n");
printf_filtered ("    author attributions in that material or in the Appropriate Legal\n");
printf_filtered ("    Notices displayed by works containing it; or\n");
printf_filtered ("\n");
printf_filtered ("    c) Prohibiting misrepresentation of the origin of that material, or\n");
printf_filtered ("    requiring that modified versions of such material be marked in\n");
printf_filtered ("    reasonable ways as different from the original version; or\n");
printf_filtered ("\n");
printf_filtered ("    d) Limiting the use for publicity purposes of names of licensors or\n");
printf_filtered ("    authors of the material; or\n");
printf_filtered ("\n");
printf_filtered ("    e) Declining to grant rights under trademark law for use of some\n");
```

```
printf_filtered ("    trade names, trademarks, or service marks; or\n");
printf_filtered ("\n");
printf_filtered ("    f) Requiring indemnification of licensors and authors of that\n");
printf_filtered ("    material by anyone who conveys the material (or modified versions of\n");
printf_filtered ("    it) with contractual assumptions of liability to the recipient, for\n");
printf_filtered ("    any liability that these contractual assumptions directly impose on\n");
printf_filtered ("    those licensors and authors.\n");
printf_filtered ("\n");
printf_filtered ("  All other non-permissive additional terms are considered \"further\n");
printf_filtered ("restrictions\" within the meaning of section 10.  If the Program as you\n");
printf_filtered ("received it, or any part of it, contains a notice stating that it is\n");
printf_filtered ("governed by this License along with a term that is a further\n");
printf_filtered ("restriction, you may remove that term.  If a license document contains\n");
printf_filtered ("a further restriction but permits relicensing or conveying under this\n");
printf_filtered ("License, you may add to a covered work material governed by the terms\n");
printf_filtered ("of that license document, provided that the further restriction does\n");
printf_filtered ("not survive such relicensing or conveying.\n");
printf_filtered ("\n");
printf_filtered ("  If you add terms to a covered work in accord with this section, you\n");
printf_filtered ("must place, in the relevant source files, a statement of the\n");
printf_filtered ("additional terms that apply to those files, or a notice indicating\n");
printf_filtered ("where to find the applicable terms.\n");
printf_filtered ("\n");
printf_filtered ("  Additional terms, permissive or non-permissive, may be stated in the\n");
printf_filtered ("form of a separately written license, or stated as exceptions;\n");
printf_filtered ("the above requirements apply either way.\n");
printf_filtered ("\n");
printf_filtered ("  8. Termination.\n");
printf_filtered ("\n");
printf_filtered ("  You may not propagate or modify a covered work except as expressly\n");
printf_filtered ("provided under this License.  Any attempt otherwise to propagate or\n");
printf_filtered ("modify it is void, and will automatically terminate your rights under\n");
printf_filtered ("this License (including any patent licenses granted under the third\n");
printf_filtered ("paragraph of section 11).\n");
printf_filtered ("\n");
printf_filtered ("  However, if you cease all violation of this License, then your\n");
printf_filtered ("license from a particular copyright holder is reinstated (a)\n");
printf_filtered ("provisionally, unless and until the copyright holder explicitly and\n");
printf_filtered ("finally terminates your license, and (b) permanently, if the copyright\n");
printf_filtered ("holder fails to notify you of the violation by some reasonable means\n");
printf_filtered ("prior to 60 days after the cessation.\n");
printf_filtered ("\n");
printf_filtered ("  Moreover, your license from a particular copyright holder is\n");
printf_filtered ("reinstated permanently if the copyright holder notifies you of the\n");
printf_filtered ("violation by some reasonable means, this is the first time you have\n");
printf_filtered ("received notice of violation of this License (for any work) from that\n");
printf_filtered ("copyright holder, and you cure the violation prior to 30 days after\n");
printf_filtered ("your receipt of the notice.\n");
printf_filtered ("\n");
printf_filtered ("  Termination of your rights under this section does not terminate the\n");
printf_filtered ("licenses of parties who have received copies or rights from you under\n");
printf_filtered ("this License.  If your rights have been terminated and not permanently\n");
printf_filtered ("reinstated, you do not qualify to receive new licenses for the same\n");
printf_filtered ("material under section 10.\n");
printf_filtered ("\n");
printf_filtered ("  9. Acceptance Not Required for Having Copies.\n");
printf_filtered ("\n");
printf_filtered ("  You are not required to accept this License in order to receive or\n");
printf_filtered ("run a copy of the Program.  Ancillary propagation of a covered work\n");
```

```
printf_filtered ("occurring solely as a consequence of using peer-to-peer transmission\n");
printf_filtered ("to receive a copy likewise does not require acceptance.  However,\n");
printf_filtered ("nothing other than this License grants you permission to propagate or\n");
printf_filtered ("modify any covered work.  These actions infringe copyright if you do\n");
printf_filtered ("not accept this License.  Therefore, by modifying or propagating a\n");
printf_filtered ("covered work, you indicate your acceptance of this License to do so.\n");
printf_filtered ("\n");
printf_filtered ("  10. Automatic Licensing of Downstream Recipients.\n");
printf_filtered ("\n");
printf_filtered ("  Each time you convey a covered work, the recipient automatically\n");
printf_filtered ("receives a license from the original licensors, to run, modify and\n");
printf_filtered ("propagate that work, subject to this License.  You are not responsible\n");
printf_filtered ("for enforcing compliance by third parties with this License.\n");
printf_filtered ("\n");
printf_filtered ("  An \"entity transaction\" is a transaction transferring control of an\n");
printf_filtered ("organization, or substantially all assets of one, or subdividing an\n");
printf_filtered ("organization, or merging organizations.  If propagation of a covered\n");
printf_filtered ("work results from an entity transaction, each party to that\n");
printf_filtered ("transaction who receives a copy of the work also receives whatever\n");
printf_filtered ("licenses to the work the party's predecessor in interest had or could\n");
printf_filtered ("give under the previous paragraph, plus a right to possession of the\n");
printf_filtered ("Corresponding Source of the work from the predecessor in interest, if\n");
printf_filtered ("the predecessor has it or can get it with reasonable efforts.\n");
printf_filtered ("\n");
printf_filtered ("  You may not impose any further restrictions on the exercise of the\n");
printf_filtered ("rights granted or affirmed under this License.  For example, you may\n");
printf_filtered ("not impose a license fee, royalty, or other charge for exercise of\n");
printf_filtered ("rights granted under this License, and you may not initiate litigation\n");
printf_filtered ("(including a cross-claim or counterclaim in a lawsuit) alleging that\n");
printf_filtered ("any patent claim is infringed by making, using, selling, offering for\n");
printf_filtered ("sale, or importing the Program or any portion of it.\n");
printf_filtered ("\n");
printf_filtered ("  11. Patents.\n");
printf_filtered ("\n");
printf_filtered ("  A \"contributor\" is a copyright holder who authorizes use under this\n");
printf_filtered ("License of the Program or a work on which the Program is based.  The\n");
printf_filtered ("work thus licensed is called the contributor's \"contributor version\".\n");
printf_filtered ("\n");
printf_filtered ("  A contributor's \"essential patent claims\" are all patent claims\n");
printf_filtered ("owned or controlled by the contributor, whether already acquired or\n");
printf_filtered ("hereafter acquired, that would be infringed by some manner, permitted\n");
printf_filtered ("by this License, of making, using, or selling its contributor version,\n");
printf_filtered ("but do not include claims that would be infringed only as a\n");
printf_filtered ("consequence of further modification of the contributor version.  For\n");
printf_filtered ("purposes of this definition, \"control\" includes the right to grant\n");
printf_filtered ("patent sublicenses in a manner consistent with the requirements of\n");
printf_filtered ("this License.\n");
printf_filtered ("\n");
printf_filtered ("  Each contributor grants you a non-exclusive, worldwide, royalty-free\n");
printf_filtered ("patent license under the contributor's essential patent claims, to\n");
printf_filtered ("make, use, sell, offer for sale, import and otherwise run, modify and\n");
printf_filtered ("propagate the contents of its contributor version.\n");
printf_filtered ("\n");
printf_filtered ("  In the following three paragraphs, a \"patent license\" is any express\n");
printf_filtered ("agreement or commitment, however denominated, not to enforce a patent\n");
printf_filtered ("(such as an express permission to practice a patent or covenant not to\n");
printf_filtered ("sue for patent infringement).  To \"grant\" such a patent license to a\n");
printf_filtered ("party means to make such an agreement or commitment not to enforce a\n");
printf_filtered ("patent against the party.\n");
```

```
printf_filtered ("\n");
printf_filtered ("  If you convey a covered work, knowingly relying on a patent license,\n");
printf_filtered ("and the Corresponding Source of the work is not available for anyone\n");
printf_filtered ("to copy, free of charge and under the terms of this License, through a\n");
printf_filtered ("publicly available network server or other readily accessible means,\n");
printf_filtered ("then you must either (1) cause the Corresponding Source to be so\n");
printf_filtered ("available, or (2) arrange to deprive yourself of the benefit of the\n");
printf_filtered ("patent license for this particular work, or (3) arrange, in a manner\n");
printf_filtered ("consistent with the requirements of this License, to extend the patent\n");
printf_filtered ("license to downstream recipients.  \"Knowingly relying\" means you have\n");
printf_filtered ("actual knowledge that, but for the patent license, your conveying the\n");
printf_filtered ("covered work in a country, or your recipient's use of the covered work\n");
printf_filtered ("in a country, would infringe one or more identifiable patents in that\n");
printf_filtered ("country that you have reason to believe are valid.\n");
printf_filtered ("\n");
printf_filtered ("  If, pursuant to or in connection with a single transaction or\n");
printf_filtered ("arrangement, you convey, or propagate by procuring conveyance of, a\n");
printf_filtered ("covered work, and grant a patent license to some of the parties\n");
printf_filtered ("receiving the covered work authorizing them to use, propagate, modify\n");
printf_filtered ("or convey a specific copy of the covered work, then the patent license\n");
printf_filtered ("you grant is automatically extended to all recipients of the covered\n");
printf_filtered ("work and works based on it.\n");
printf_filtered ("\n");
printf_filtered ("  A patent license is \"discriminatory\" if it does not include within\n");
printf_filtered ("the scope of its coverage, prohibits the exercise of, or is\n");
printf_filtered ("conditioned on the non-exercise of one or more of the rights that are\n");
printf_filtered ("specifically granted under this License.  You may not convey a covered\n");
printf_filtered ("work if you are a party to an arrangement with a third party that is\n");
printf_filtered ("in the business of distributing software, under which you make payment\n");
printf_filtered ("to the third party based on the extent of your activity of conveying\n");
printf_filtered ("the work, and under which the third party grants, to any of the\n");
printf_filtered ("parties who would receive the covered work from you, a discriminatory\n");
printf_filtered ("patent license (a) in connection with copies of the covered work\n");
printf_filtered ("conveyed by you (or copies made from those copies), or (b) primarily\n");
printf_filtered ("for and in connection with specific products or compilations that\n");
printf_filtered ("contain the covered work, unless you entered into that arrangement,\n");
printf_filtered ("or that patent license was granted, prior to 28 March 2007.\n");
printf_filtered ("\n");
printf_filtered ("  Nothing in this License shall be construed as excluding or limiting\n");
printf_filtered ("any implied license or other defenses to infringement that may\n");
printf_filtered ("otherwise be available to you under applicable patent law.\n");
printf_filtered ("\n");
printf_filtered ("  12. No Surrender of Others' Freedom.\n");
printf_filtered ("\n");
printf_filtered ("  If conditions are imposed on you (whether by court order, agreement or\n");
printf_filtered ("otherwise) that contradict the conditions of this License, they do not\n");
printf_filtered ("excuse you from the conditions of this License.  If you cannot convey a\n");
printf_filtered ("covered work so as to satisfy simultaneously your obligations under this\n");
printf_filtered ("License and any other pertinent obligations, then as a consequence you may\n");
printf_filtered ("not convey it at all.  For example, if you agree to terms that obligate you\n");
printf_filtered ("to collect a royalty for further conveying from those to whom you convey\n");
printf_filtered ("the Program, the only way you could satisfy both those terms and this\n");
printf_filtered ("License would be to refrain entirely from conveying the Program.\n");
printf_filtered ("\n");
printf_filtered ("  13. Use with the GNU Affero General Public License.\n");
printf_filtered ("\n");
printf_filtered ("  Notwithstanding any other provision of this License, you have\n");
printf_filtered ("permission to link or combine any covered work with a work licensed\n");
printf_filtered ("under version 3 of the GNU Affero General Public License into a single\n");
```

```
  printf_filtered ("combined work, and to convey the resulting work.  The terms of this\n");
  printf_filtered ("License will continue to apply to the part which is the covered work,\n");
  printf_filtered ("but the special requirements of the GNU Affero General Public License,\n");
  printf_filtered ("section 13, concerning interaction through a network will apply to the\n");
  printf_filtered ("combination as such.\n");
  printf_filtered ("\n");
  printf_filtered ("  14. Revised Versions of this License.\n");
  printf_filtered ("\n");
  printf_filtered ("  The Free Software Foundation may publish revised and/or new versions of\n");
  printf_filtered ("the GNU General Public License from time to time.  Such new versions will\n");
  printf_filtered ("be similar in spirit to the present version, but may differ in detail to\n");
  printf_filtered ("address new problems or concerns.\n");
  printf_filtered ("\n");
  printf_filtered ("  Each version is given a distinguishing version number.  If the\n");
  printf_filtered ("Program specifies that a certain numbered version of the GNU General\n");
  printf_filtered ("Public License \"or any later version\" applies to it, you have the\n");
  printf_filtered ("option of following the terms and conditions either of that numbered\n");
  printf_filtered ("version or of any later version published by the Free Software\n");
  printf_filtered ("Foundation.  If the Program does not specify a version number of the\n");
  printf_filtered ("GNU General Public License, you may choose any version ever published\n");
  printf_filtered ("by the Free Software Foundation.\n");
  printf_filtered ("\n");
  printf_filtered ("  If the Program specifies that a proxy can decide which future\n");
  printf_filtered ("versions of the GNU General Public License can be used, that proxy's\n");
  printf_filtered ("public statement of acceptance of a version permanently authorizes you\n");
  printf_filtered ("to choose that version for the Program.\n");
  printf_filtered ("\n");
  printf_filtered ("  Later license versions may give you additional or different\n");
  printf_filtered ("permissions.  However, no additional obligations are imposed on any\n");
  printf_filtered ("author or copyright holder as a result of your choosing to follow a\n");
  printf_filtered ("later version.\n");
  printf_filtered ("\n");
}

static void
show_warranty_command (const char *ignore, int from_tty)
{
  printf_filtered ("  15. Disclaimer of Warranty.\n");
  printf_filtered ("\n");
  printf_filtered ("  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY\n");
  printf_filtered ("APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT\n");
  printf_filtered ("HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM \"AS IS\" WITHOUT WARRANTY\n");
  printf_filtered ("OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,\n");
  printf_filtered ("THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR\n");
  printf_filtered ("PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM\n");
  printf_filtered ("IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF\n");
  printf_filtered ("ALL NECESSARY SERVICING, REPAIR OR CORRECTION.\n");
  printf_filtered ("\n");
  printf_filtered ("  16. Limitation of Liability.\n");
  printf_filtered ("\n");
  printf_filtered ("  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING\n");
  printf_filtered ("WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS\n");
  printf_filtered ("THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY\n");
  printf_filtered ("GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE\n");
  printf_filtered ("USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF\n");
  printf_filtered ("DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD\n");
  printf_filtered ("PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),\n");
  printf_filtered ("EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF\n");
  printf_filtered ("SUCH DAMAGES.\n");
```

```
  printf_filtered ("\n");
  printf_filtered ("  17. Interpretation of Sections 15 and 16.\n");
  printf_filtered ("\n");
  printf_filtered ("  If the disclaimer of warranty and limitation of liability provided\n");
  printf_filtered ("above cannot be given local legal effect according to their terms,\n");
  printf_filtered ("reviewing courts shall apply local law that most closely approximates\n");
  printf_filtered ("an absolute waiver of all civil liability in connection with the\n");
  printf_filtered ("Program, unless a warranty or assumption of liability accompanies a\n");
  printf_filtered ("copy of the Program in return for a fee.\n");
  printf_filtered ("\n");
}

void
_initialize_copying (void)
{
  add_cmd ("copying", no_set_class, show_copying_command,
           _("Conditions for redistributing copies of GDB."),
           &showlist);
  add_cmd ("warranty", no_set_class, show_warranty_command,
           _("Various kinds of warranty you do not have."),
           &showlist);

  /* For old-timers, allow "info copying", etc.  */
  add_info ("copying", show_copying_command,
            _("Conditions for redistributing copies of GDB."));
  add_info ("warranty", show_warranty_command,
            _("Various kinds of warranty you do not have."));
}
------------------------------------------------------------------
gdb/include/COPYING3
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.
```

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

```
  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright.  Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below.  Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
```

and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

    c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

  A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the machine-readable Corresponding Source under the terms of this License, in one of these ways:

    a) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by the Corresponding Source fixed on a durable physical medium customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product (including a physical distribution medium), accompanied by a written offer, valid for at least three years and valid for as long as you offer spare parts or customer support for that product model, to give anyone who possesses the object code either (1) a copy of the Corresponding Source for all the software in the product that is covered by this License, on a durable physical medium customarily used for software interchange, for a price no

more than your reasonable cost of physically performing this conveying of source, or (2) access to copy the Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied

by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that

material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or

modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone

to copy, free of charge and under the terms of this License, through a
publicly available network server or other readily accessible means,
then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients. "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,

section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a

```
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gdb/include/COPYING
----------------------------------------------------------------------
```

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Library General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is

void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding

those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least

```
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
gdb/zlib/contrib/dotzlib/LICENSE_1_0.txt
----------------------------------------------------------------------
Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
```

Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.--
gdb/sim/arm/COPYING

                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:

(1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other

parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited

permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is

released under this License and any conditions added under section
7. This requirement modifies the requirement in section 4 to
"keep intact all notices".

c) You must license the entire work, as a whole, under this
License to anyone who comes into possession of a copy. This
License will therefore apply, along with any applicable section 7
additional terms, to the whole of the work, and all its parts,
regardless of how they are packaged. This License gives no
permission to license the work in any other way, but it does not
invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display
Appropriate Legal Notices; however, if the Program has interactive
interfaces that do not display Appropriate Legal Notices, your
work need not make them do so.

A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

a) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by the
Corresponding Source fixed on a durable physical medium
customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the

Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms

of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an

organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

```
  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License.  You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all.  For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
```

Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively

```
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gdb/sim/ppc/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.
```

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

```
  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License.  Each licensee is addressed as "you".  "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy.  The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy.  Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies.  Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License.  If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
```

(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to

```
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
```

machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent

the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that

copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of

this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program> Copyright (C) <year> <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, your program's commands

```
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gdb/sim/ppc/COPYING.LIB
----------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
                    675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.
```

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany

```
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.


  6. As an exception to the Sections above, you may also compile or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
```

changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies,

or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is

```
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free
    Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
------------------------------------------------------------------
gdb/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
```

have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you

conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable

source code, which must be distributed under the terms of Sections
1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three
years, to give any third party, for a charge no more than your
cost of physically performing source distribution, a complete
machine-readable copy of the corresponding source code, to be
distributed under the terms of Sections 1 and 2 above on a medium
customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer
to distribute corresponding source code. (This alternative is
allowed only for noncommercial distribution and only if you
received the program in object code or executable form with such
an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals

of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

```
If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
gdb/COPYING3.LIB
----------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library.  The particular version of the Library
```

with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library. You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that

```
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
   GNU GPL, and only to the extent that such information is
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
   the Minimal Corresponding Source and Corresponding Application
   Code. If you use option 4d1, you must provide the Installation
   Information in the manner specified by section 6 of the GNU GPL
   for conveying Corresponding Source.)

  5. Combined Libraries.

  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

   a) Accompany the combined library with a copy of the same work based
   on the Library, uncombined with any other library facilities,
   conveyed under the terms of this License.

   b) Give prominent notice with the combined library that part of it
   is a work based on the Library, and explaining where to find the
   accompanying uncombined form of the same work.

  6. Revised Versions of the GNU Lesser General Public License.

  The Free Software Foundation may publish revised and/or new versions
```

of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----
gdb/COPYING.LIB

                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL. It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it. You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave

you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

  The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

  Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

  However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The

former contains code derived from the library, while the latter only
works together with the library.

  Note that it is possible for a library to be covered by the ordinary
General Public License rather than by this special one.

                GNU LIBRARY GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library which
contains a notice placed by the copyright holder or other authorized
party saying it may be distributed under the terms of this Library
General Public License (also called "this License"). Each licensee is
addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

```
    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.


  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.
```

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the

```
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library.  (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    c) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    d) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the source code distributed need not include anything that is normally
distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.


  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.
```

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License. Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License. However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Library or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest

```
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free
    Software Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston,
    MA 02110-1301, USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
------------------------------------------------------------------
gdb/libiberty/copying-lib.texi
------------------------------------------------------------------
@node Library Copying
@appendixsec GNU LESSER GENERAL PUBLIC LICENSE

@cindex LGPL, Lesser General Public License
@center Version 2.1, February 1999

@display
Copyright @copyright{} 1991-2017 Free Software Foundation, Inc.
51 Franklin Street - Fifth Floor, Boston, MA 02110-1301, USA

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
as the successor of the GNU Library Public License, version 2, hence the
```

```
version number 2.1.]
@end display

@appendixsubsec Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software---to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software---typically libraries---of the Free
Software Foundation and other authors who decide to use it.  You can use
it too, but we suggest you first think carefully about whether this
license or the ordinary General Public License is the better strategy to
use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of it
in new free programs; and that you are informed that you can do these
things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License.  This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
```

```
is quite different from the ordinary General Public License.  We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library.  The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom.  The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the @dfn{Lesser} General Public License because it
does @emph{Less} to protect the user's freedom than the ordinary General
Public License.  It also provides other free software developers Less
of an advantage over competing non-free programs.  These disadvantages
are the reason we use the ordinary General Public License for many
libraries.  However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard.  To achieve this, non-free programs must be
allowed to use the library.  A more frequent case is that a free
library does the same job as widely used non-free libraries.  In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
``work based on the library'' and a ``work that uses the library''.  The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

@iftex
@appendixsubsec TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
@end iftex
@ifinfo
@center GNU LESSER GENERAL PUBLIC LICENSE
@center TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION
@end ifinfo

@enumerate 0
@item
This License Agreement applies to any software library or other program
which contains a notice placed by the copyright holder or other
authorized party saying it may be distributed under the terms of this
```

```
Lesser General Public License (also called ``this License'').  Each
licensee is addressed as ``you''.

  A ``library'' means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The ``Library'', below, refers to any such software library or work
which has been distributed under these terms.  A ``work based on the
Library'' means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language.  (Hereinafter, translation is
included without limitation in the term ``modification''.)

  ``Source code'' for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.

@item
You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

@item
You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

@enumerate a
@item
The modified work must itself be a software library.

@item
You must cause the files modified to carry prominent notices
stating that you changed the files and the date of any change.

@item
You must cause the whole of the work to be licensed at no
charge to all third parties under the terms of this License.
```

@item
If a facility in the modified Library refers to a function or a
table of data to be supplied by an application program that uses
the facility, other than as an argument passed when the facility
is invoked, then you must make a good faith effort to ensure that,
in the event an application does not supply such function or
table, the facility still operates, and performs whatever part of
its purpose remains meaningful.

(For example, a function in a library to compute square roots has
a purpose that is entirely well-defined independent of the
application. Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)
@end enumerate

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

@item
You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

@item
You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form

```
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

@item
A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a ``work that uses the Library''.  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a ``work that uses the Library'' with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a ``work that uses the
library''.  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a ``work that uses the Library'' uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

@item
As an exception to the Sections above, you may also combine or
link a ``work that uses the Library'' with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License.  Also, you must do one
of these things:
```

```
@enumerate a
@item
Accompany the work with the complete corresponding
machine-readable source code for the Library including whatever
changes were used in the work (which must be distributed under
Sections 1 and 2 above); and, if the work is an executable linked
with the Library, with the complete machine-readable ``work that
uses the Library'', as object code and/or source code, so that the
user can modify the Library and then relink to produce a modified
executable containing the modified Library.  (It is understood
that the user who changes the contents of definitions files in the
Library will not necessarily be able to recompile the application
to use the modified definitions.)

@item
Use a suitable shared library mechanism for linking with the Library.  A
suitable mechanism is one that (1) uses at run time a copy of the
library already present on the user's computer system, rather than
copying library functions into the executable, and (2) will operate
properly with a modified version of the library, if the user installs
one, as long as the modified version is interface-compatible with the
version that the work was made with.

@item
Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

@item
If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

@item
Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.
@end enumerate

  For an executable, the required form of the ``work that uses the
Library'' must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies the
executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

@item
You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
```

```
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

@enumerate a
@item
Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities.  This must be distributed under the terms of the
Sections above.

@item
Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.
@end enumerate

@item
You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

@item
You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

@item
Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.

@item
If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all.  For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
```

particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

@item
If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

@item
The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
``any later version'', you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

@item
If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

@center NO WARRANTY

@item
BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY ``AS IS'' WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR

```
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU.  SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

@item
IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.
@end enumerate

@iftex
@heading END OF TERMS AND CONDITIONS
@end iftex
@ifinfo
@center END OF TERMS AND CONDITIONS
@end ifinfo

@page
@appendixsubsec How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
``copyright'' line and a pointer to where the full notice is found.

@smallexample
@var{one line to give the library's name and an idea of what it does.}
Copyright (C) @var{year}  @var{name of author}

This library is free software; you can redistribute it and/or modify it
under the terms of the GNU Lesser General Public License as published by
the Free Software Foundation; either version 2.1 of the License, or (at
your option) any later version.

This library is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301,
USA.
@end smallexample

Also add information on how to contact you by electronic and paper mail.
```

```
You should also get your employer (if you work as a programmer) or your
school, if any, to sign a ``copyright disclaimer'' for the library, if
necessary.  Here is a sample; alter the names:

@smallexample
Yoyodyne, Inc., hereby disclaims all copyright interest in the library
`Frob' (a library for tweaking knobs) written by James Random Hacker.

@var{signature of Ty Coon}, 1 April 1990
Ty Coon, President of Vice
@end smallexample

That's all there is to it!
------------------------------------------------------------------
gdb/libiberty/copysign.c
------------------------------------------------------------------
#include <ansidecl.h>

#ifdef __IEEE_BIG_ENDIAN

typedef union
{
  double value;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 11;
    unsigned int fraction0:4;
    unsigned int fraction1:16;
    unsigned int fraction2:16;
    unsigned int fraction3:16;

  } number;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 11;
    unsigned int quiet:1;
    unsigned int function0:3;
    unsigned int function1:16;
    unsigned int function2:16;
    unsigned int function3:16;
  } nan;
  struct
  {
    unsigned long msw;
    unsigned long lsw;
  } parts;
    long aslong[2];
} __ieee_double_shape_type;

#endif

#ifdef __IEEE_LITTLE_ENDIAN

typedef union
{
  double value;
```

```
  struct
  {
#ifdef __SMALL_BITFIELDS
    unsigned int fraction3:16;
    unsigned int fraction2:16;
    unsigned int fraction1:16;
    unsigned int fraction0: 4;
#else
    unsigned int fraction1:32;
    unsigned int fraction0:20;
#endif
    unsigned int exponent :11;
    unsigned int sign     : 1;
  } number;
  struct
  {
#ifdef __SMALL_BITFIELDS
    unsigned int function3:16;
    unsigned int function2:16;
    unsigned int function1:16;
    unsigned int function0:3;
#else
    unsigned int function1:32;
    unsigned int function0:19;
#endif
    unsigned int quiet:1;
    unsigned int exponent: 11;
    unsigned int sign : 1;
  } nan;
  struct
  {
    unsigned long lsw;
    unsigned long msw;
  } parts;

  long aslong[2];

} __ieee_double_shape_type;

#endif

#ifdef __IEEE_BIG_ENDIAN
typedef union
{
  float value;
  struct
  {
    unsigned int sign : 1;
    unsigned int exponent: 8;
    unsigned int fraction0: 7;
    unsigned int fraction1: 16;
  } number;
  struct
  {
    unsigned int sign:1;
    unsigned int exponent:8;
    unsigned int quiet:1;
    unsigned int function0:6;
    unsigned int function1:16;
```

```
  } nan;
  long p1;

} __ieee_float_shape_type;
#endif

#ifdef __IEEE_LITTLE_ENDIAN
typedef union
{
  float value;
  struct
  {
    unsigned int fraction0: 7;
    unsigned int fraction1: 16;
    unsigned int exponent: 8;
    unsigned int sign : 1;
  } number;
  struct
  {
    unsigned int function1:16;
    unsigned int function0:6;
    unsigned int quiet:1;
    unsigned int exponent:8;
    unsigned int sign:1;
  } nan;
  long p1;

} __ieee_float_shape_type;
#endif

#if defined(__IEEE_BIG_ENDIAN) || defined(__IEEE_LITTLE_ENDIAN)

double
copysign (double x, double y)
{
  __ieee_double_shape_type a,b;
  b.value = y;
  a.value = x;
  a.number.sign =b.number.sign;
  return a.value;
}

#else

double
copysign (double x, double y)
{
  if ((x < 0 && y > 0) || (x > 0 && y < 0))
    return -x;
  return x;
}

#endif
------------------------------------------------------------------
gdb/libiberty/COPYING.LIB
------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999
```

```
 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.


  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
```

restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

                  GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or

other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility

    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the

source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood

that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or

distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus

excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

```
  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

3.34 gdbm

```
gdbm
-----------------------------------------------------------------
gdbm/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007, 2011 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

```
  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
```

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.35 gettext

```
gettext
-----------------------------------------------------------------------
gettext/gettext-runtime/intl/COPYING.LIB
-----------------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
```

```
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.
^L
  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License.  This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License.  We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library.  The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom.  The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License.  It also provides other free software developers Less
of an advantage over competing non-free programs.  These disadvantages
are the reason we use the ordinary General Public License for many
libraries.  However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it
becomes
a de-facto standard.  To achieve this, non-free programs must be
allowed to use the library.  A more frequent case is that a free
library does the same job as widely used non-free libraries.  In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.
```

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.
^L

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation
and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1

```
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.
^L
  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.
```

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.
^L
  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference

```
directing the user to the copy of this License.  Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library.  (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library.  A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it.  However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system.  Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.
^L
  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
```

facilities. This must be distributed under the terms of the
Sections above.

b) Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.
^L
11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.
^L
  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

^L
           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

  To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.

    <one line to give the library's name and a brief idea of what it
does.>
    Copyright (C) <year> <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston,
    MA 02110-1301, USA

Also add information on how to contact you by electronic and paper
mail.

You should also get your employer (if you work as a programmer) or
your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James
Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!

----
gettext/gettext-runtime/COPYING

The gettext-runtime package is partially under the LGPL and partially under
the GPL.

```
The following parts are under the LGPL, see file intl/COPYING.LIB:
  - the libintl and libasprintf libraries and their header files,
  - the libintl.jar Java library,
  - the GNU.Gettext.dll C# library,
  - the gettext.sh shells script function library.

The following parts are under the GPL, see file COPYING in the toplevel
directory:
  - the _programs_ gettext, ngettext, envsubst,
  - the documentation.
------------------------------------------------------------------
gettext/gettext-runtime/libasprintf/COPYING
------------------------------------------------------------------
The libasprintf package is under the LGPL, see file COPYING.LIB.
------------------------------------------------------------------
gettext/gettext-runtime/libasprintf/COPYING.LIB
------------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA 02110-1301, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
```

or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.
^L
  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of

```
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
"work based on the library" and a "work that uses the library".  The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.
^L
                  GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms.  A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language.  (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control
compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.
```

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2,

```
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.
^L
  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.
^L
  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
```

under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.
^L

```
  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.
^L
  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all.  For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply, and the section as a whole is intended to apply in other
circumstances.
```

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.
^L
  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU

```
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS
^L
           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

  To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.


    <one line to give the library's name and a brief idea of what it
does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston,
    MA 02110-1301, USA

Also add information on how to contact you by electronic and paper
mail.

You should also get your employer (if you work as a programmer) or
your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James
Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice
```

```
That's all there is to it!


----------------------------------------------------------------------
gettext/gettext-tools/COPYING
----------------------------------------------------------------------
This subpackage is under the GPL, see file COPYING in the toplevel directory.
----------------------------------------------------------------------
gettext/gettext-tools/gnulib-m4/copy-file.m4
----------------------------------------------------------------------
# copy-file.m4 serial 3
dnl Copyright (C) 2003, 2009-2016 Free Software Foundation, Inc.
dnl This file is free software; the Free Software Foundation
dnl gives unlimited permission to copy and/or distribute it,
dnl with or without modifications, as long as this notice is preserved.

AC_DEFUN([gl_COPY_FILE],
[
  AC_CHECK_HEADERS_ONCE([unistd.h utime.h])
  AC_CHECK_FUNCS([chown utime utimes])
])
----------------------------------------------------------------------
gettext/gettext-tools/gnulib-lib/copy-acl.c
----------------------------------------------------------------------
/* Copy access control list from one file to file.  -*- coding: utf-8 -*-

   Copyright (C) 2002-2003, 2005-2016 Free Software Foundation, Inc.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <http://www.gnu.org/licenses/>.

   Written by Paul Eggert, Andreas Grünbacher, and Bruno Haible.  */

#include <config.h>

#include "acl.h"

#include <errno.h>

#include "quote.h"
#include "error.h"
#include "gettext.h"
#define _(msgid) gettext (msgid)


/* Copy access control lists from one file to another. If SOURCE_DESC is
   a valid file descriptor, use file descriptor operations, else use
   filename based operations on SRC_NAME. Likewise for DEST_DESC and
   DST_NAME.
```

```
   If access control lists are not available, fchmod the target file to
   MODE.  Also sets the non-permission bits of the destination file
   (S_ISUID, S_ISGID, S_ISVTX) to those from MODE if any are set.
   Return 0 if successful, otherwise output a diagnostic and return a
   negative error code.  */

int
copy_acl (const char *src_name, int source_desc, const char *dst_name,
          int dest_desc, mode_t mode)
{
  int ret = qcopy_acl (src_name, source_desc, dst_name, dest_desc, mode);
  switch (ret)
    {
    case -2:
      error (0, errno, "%s", quote (src_name));
      break;

    case -1:
      error (0, errno, _("preserving permissions for %s"), quote (dst_name));
      break;

    default:
      break;
    }
  return ret;
}
------------------------------------------------------------------
gettext/gettext-tools/gnulib-lib/copy-file.h
------------------------------------------------------------------
/* Copying of files.
   Copyright (C) 2001-2003, 2009-2016 Free Software Foundation, Inc.
   Written by Bruno Haible <haible@clisp.cons.org>, 2001.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <http://www.gnu.org/licenses/>.  */


#ifdef __cplusplus
extern "C" {
#endif


/* Error codes returned by qcopy_file_preserving.  */
enum
{
  GL_COPY_ERR_OPEN_READ = -1,
  GL_COPY_ERR_OPEN_BACKUP_WRITE = -2,
  GL_COPY_ERR_READ = -3,
  GL_COPY_ERR_WRITE = -4,
```

```
  GL_COPY_ERR_AFTER_READ = -5,
  GL_COPY_ERR_GET_ACL = -6,
  GL_COPY_ERR_SET_ACL = -7
};

/* Copy a regular file: from src_filename to dest_filename.
   The destination file is assumed to be a backup file.
   Modification times, owner, group and access permissions are preserved as
   far as possible.
   Return 0 if successful, otherwise set errno and return one of the error
   codes above.  */
extern int qcopy_file_preserving (const char *src_filename, const char *dest_filename);

/* Copy a regular file: from src_filename to dest_filename.
   The destination file is assumed to be a backup file.
   Modification times, owner, group and access permissions are preserved as
   far as possible.
   Exit upon failure.  */
extern void copy_file_preserving (const char *src_filename, const char *dest_filename);


#ifdef __cplusplus
}
#endif
------------------------------------------------------------------
gettext/gettext-tools/gnulib-lib/copy-file.c
------------------------------------------------------------------
/* Copying of files.
   Copyright (C) 2001-2003, 2006-2007, 2009-2016 Free Software Foundation, Inc.
   Written by Bruno Haible <haible@clisp.cons.org>, 2001.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <http://www.gnu.org/licenses/>.  */


#include <config.h>

/* Specification.  */
#include "copy-file.h"

#include <errno.h>
#include <fcntl.h>
#include <stddef.h>
#include <stdlib.h>
#include <sys/stat.h>
#include <unistd.h>

#if HAVE_UTIME || HAVE_UTIMES
# if HAVE_UTIME_H
```

```
#  include <utime.h>
# else
#  include <sys/utime.h>
# endif
#endif

#include "error.h"
#include "ignore-value.h"
#include "safe-read.h"
#include "full-write.h"
#include "acl.h"
#include "binary-io.h"
#include "quote.h"
#include "gettext.h"
#include "xalloc.h"

#define _(str) gettext (str)

enum { IO_SIZE = 32 * 1024 };

int
qcopy_file_preserving (const char *src_filename, const char *dest_filename)
{
  int err = 0;
  int src_fd;
  struct stat statbuf;
  int mode;
  int dest_fd;
  char *buf = xmalloc (IO_SIZE);

  src_fd = open (src_filename, O_RDONLY | O_BINARY);
  if (src_fd < 0)
    {
      err = GL_COPY_ERR_OPEN_READ;
      goto error;
    }
  if (fstat (src_fd, &statbuf) < 0)
    {
      err = GL_COPY_ERR_OPEN_READ;
      goto error_src;
    }

  mode = statbuf.st_mode & 07777;

  dest_fd = open (dest_filename, O_WRONLY | O_CREAT | O_TRUNC | O_BINARY, 0600);
  if (dest_fd < 0)
    {
      err = GL_COPY_ERR_OPEN_BACKUP_WRITE;
      goto error_src;
    }

  /* Copy the file contents.  */
  for (;;)
    {
      size_t n_read = safe_read (src_fd, buf, IO_SIZE);
      if (n_read == SAFE_READ_ERROR)
        {
          err = GL_COPY_ERR_READ;
          goto error_src_dest;
```

```
        }
      if (n_read == 0)
        break;

      if (full_write (dest_fd, buf, n_read) < n_read)
        {
          err = GL_COPY_ERR_WRITE;
          goto error_src_dest;
        }
    }

  free (buf);
  buf = NULL; /* To avoid double free in error case.  */

#if !USE_ACL
  if (close (dest_fd) < 0)
    {
      err = GL_COPY_ERR_WRITE;
      goto error_src;
    }
  if (close (src_fd) < 0)
    {
      err = GL_COPY_ERR_AFTER_READ;
      goto error;
    }
#endif

  /* Preserve the access and modification times.  */
#if HAVE_UTIME
  {
    struct utimbuf ut;

    ut.actime = statbuf.st_atime;
    ut.modtime = statbuf.st_mtime;
    utime (dest_filename, &ut);
  }
#elif HAVE_UTIMES
  {
    struct timeval ut[2];

    ut[0].tv_sec = statbuf.st_atime; ut[0].tv_usec = 0;
    ut[1].tv_sec = statbuf.st_mtime; ut[1].tv_usec = 0;
    utimes (dest_filename, &ut);
  }
#endif

#if HAVE_CHOWN
  /* Preserve the owner and group.  */
  ignore_value (chown (dest_filename, statbuf.st_uid, statbuf.st_gid));
#endif

  /* Preserve the access permissions.  */
#if USE_ACL
  switch (qcopy_acl (src_filename, src_fd, dest_filename, dest_fd, mode))
    {
    case -2:
      err = GL_COPY_ERR_GET_ACL;
      goto error_src_dest;
    case -1:
```

```
      err = GL_COPY_ERR_SET_ACL;
      goto error_src_dest;
    }
#else
  chmod (dest_filename, mode);
#endif

#if USE_ACL
  if (close (dest_fd) < 0)
    {
      err = GL_COPY_ERR_WRITE;
      goto error_src;
    }
  if (close (src_fd) < 0)
    {
      err = GL_COPY_ERR_AFTER_READ;
      goto error;
    }
#endif

  return 0;

 error_src_dest:
  close (dest_fd);
 error_src:
  close (src_fd);
 error:
  free (buf);
  return err;
}

void
copy_file_preserving (const char *src_filename, const char *dest_filename)
{
  switch (qcopy_file_preserving (src_filename, dest_filename))
    {
    case 0:
      return;

    case GL_COPY_ERR_OPEN_READ:
      error (EXIT_FAILURE, errno, _("error while opening %s for reading"),
             quote (src_filename));

    case GL_COPY_ERR_OPEN_BACKUP_WRITE:
      error (EXIT_FAILURE, errno, _("cannot open backup file %s for writing"),
             quote (dest_filename));

    case GL_COPY_ERR_READ:
      error (EXIT_FAILURE, errno, _("error reading %s"),
             quote (src_filename));

    case GL_COPY_ERR_WRITE:
      error (EXIT_FAILURE, errno, _("error writing %s"),
             quote (dest_filename));

    case GL_COPY_ERR_AFTER_READ:
      error (EXIT_FAILURE, errno, _("error after reading %s"),
             quote (src_filename));
```

```
    case GL_COPY_ERR_GET_ACL:
      error (EXIT_FAILURE, errno, "%s", quote (src_filename));

    case GL_COPY_ERR_SET_ACL:
      error (EXIT_FAILURE, errno, _("preserving permissions for %s"),
             quote (dest_filename));

    default:
      abort ();
    }
}
```

---

gettext/gettext-tools/gnulib-lib/libxml/COPYING

Except where otherwise noted in the source code (e.g. the files hash.c,
list.c and the trio files, which are covered by a similar licence but
with different Copyright notices) all the files are:

 Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is fur-
nished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FIT-
NESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.

---

gettext/gnulib-local/lib/libxml/COPYING

Except where otherwise noted in the source code (e.g. the files hash.c,
list.c and the trio files, which are covered by a similar licence but
with different Copyright notices) all the files are:

 Copyright (C) 1998-2012 Daniel Veillard. All Rights Reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is fur-
nished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FIT-
NESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE

```
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.
----------------------------------------------------------------------
gettext/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
```

protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright.  Those thus making or running the covered works
```

for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
```

you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall

be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of

rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered

work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

```
  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
```

```
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
--------------------------------------------------------------------
gettext/djgpp/COPYING.DJ
--------------------------------------------------------------------
This is the file "copying.dj".  It does NOT apply to any sources or
binaries copyrighted by UCB Berkeley, the Free Software Foundation, or
any other agency besides DJ Delorie and others who have agreed to
allow their sources to be distributed under these terms.

   Copyright Information for sources and executables that are marked
   Copyright (C) DJ Delorie
                 7 Kim Lane
                 Rochester NH  03867-2954

This document is Copyright (C) DJ Delorie and may be distributed
verbatim, but changing it is not allowed.

Source code copyright DJ Delorie is distributed under the terms of the
GNU General Public Licence, with the following exceptions:

* Sources used to build crt0.o, gcrt0.o, libc.a, libdbg.a, and
  libemu.a are distributed under the terms of the GNU Library General
  Public License, rather than the GNU GPL.

* Any existing copyright or authorship information in any given source
  file must remain intact.  If you modify a source file, a notice to that
  effect must be added to the authorship information in the source file.
```

```
* Runtime binaries, as provided by DJ in DJGPP, may be distributed
  without sources ONLY if the recipient is given sufficient information
  to obtain a copy of djgpp themselves.  This primarily applies to
  go32-v2.exe, emu387.dxe, and stubedit.exe.

* Runtime objects and libraries, as provided by DJ in DJGPP, when
  linked into an application, may be distributed without sources ONLY
  if the recipient is given sufficient information to obtain a copy of
  djgpp themselves.  This primarily applies to crt0.o and libc.a.

-----

Changes to source code copyright BSD, FSF, or others, by DJ Delorie
fall under the terms of the original copyright.  Such files usually
have multiple copyright notices in them.

A copy of the files "COPYING" and "COPYING.LIB" are included with this
document.  If you did not receive a copy of these files, you may
obtain one from whence this document was obtained, or by writing:

      Free Software Foundation
      51 Franklin Street, Fifth Floor
      Boston, MA 02110-1301
      USA
```

3.36 glibc

```
glibc
-----------------------------------------------------------------
glibc/LICENSES
-----------------------------------------------------------------
This file contains the copying permission notices for various files in the
GNU C Library distribution that have copyright owners other than the Free
Software Foundation.  These notices all require that a copy of the notice
be included in the accompanying documentation and be distributed with
binary distributions of the code, so be sure to include this file along
with any binary distributions derived from the GNU C Library.



All code incorporated from 4.4 BSD is distributed under the following
license:

Copyright (C) 1991 Regents of the University of California.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. [This condition was removed.]
4. Neither the name of the University nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.



The DNS resolver code, taken from BIND 4.9.5, is copyrighted by UC
Berkeley, by Digital Equipment Corporation and by Internet Software
Consortium.  The DEC portions are under the following license:

Portions Copyright (C) 1993 by Digital Equipment Corporation.

Permission to use, copy, modify, and distribute this software for any
purpose with or without fee is hereby granted, provided that the above
copyright notice and this permission notice appear in all copies, and
```

```
that the name of Digital Equipment Corporation not be used in
advertising or publicity pertaining to distribution of the document or
software without specific, written prior permission.

THE SOFTWARE IS PROVIDED ``AS IS'' AND DIGITAL EQUIPMENT CORP.
DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS.  IN NO EVENT SHALL
DIGITAL EQUIPMENT CORPORATION BE LIABLE FOR ANY SPECIAL, DIRECT,
INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING
FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT,
NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION
WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.


The ISC portions are under the following license:

Portions Copyright (c) 1996-1999 by Internet Software Consortium.

Permission to use, copy, modify, and distribute this software for any
purpose with or without fee is hereby granted, provided that the above
copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS" AND INTERNET SOFTWARE CONSORTIUM DISCLAIMS
ALL WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL INTERNET SOFTWARE
CONSORTIUM BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL
DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR
PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS
ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS
SOFTWARE.


The Sun RPC support (from rpcsrc-4.0) is covered by the following
license:

Copyright (c) 2010, Oracle America, Inc.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

    * Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
    * Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials
      provided with the distribution.
    * Neither the name of the "Oracle America, Inc." nor the names of its
      contributors may be used to endorse or promote products derived
      from this software without specific prior written permission.

  THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
  "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
  LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS
  FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE
  COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
  INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
  DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
  GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
```

```
  INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
  WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
  NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
  OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.



The following CMU license covers some of the support code for Mach,
derived from Mach 3.0:

Mach Operating System
Copyright (C) 1991,1990,1989 Carnegie Mellon University
All Rights Reserved.

Permission to use, copy, modify and distribute this software and its
documentation is hereby granted, provided that both the copyright
notice and this permission notice appear in all copies of the
software, derivative works or modified versions, and any portions
thereof, and that both notices appear in supporting documentation.

CARNEGIE MELLON ALLOWS FREE USE OF THIS SOFTWARE IN ITS ``AS IS''
CONDITION.  CARNEGIE MELLON DISCLAIMS ANY LIABILITY OF ANY KIND FOR
ANY DAMAGES WHATSOEVER RESULTING FROM THE USE OF THIS SOFTWARE.

Carnegie Mellon requests users of this software to return to

 Software Distribution Coordinator
 School of Computer Science
 Carnegie Mellon University
 Pittsburgh PA 15213-3890

or Software.Distribution@CS.CMU.EDU any improvements or
extensions that they make and grant Carnegie Mellon the rights to
redistribute these changes.


The file if_ppp.h is under the following CMU license:

 Redistribution and use in source and binary forms, with or without
 modification, are permitted provided that the following conditions
 are met:
 1. Redistributions of source code must retain the above copyright
    notice, this list of conditions and the following disclaimer.
 2. Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.
 3. Neither the name of the University nor the names of its contributors
    may be used to endorse or promote products derived from this software
    without specific prior written permission.

 THIS SOFTWARE IS PROVIDED BY CARNEGIE MELLON UNIVERSITY AND
 CONTRIBUTORS ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES,
 INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
 MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
 IN NO EVENT SHALL THE UNIVERSITY OR CONTRIBUTORS BE LIABLE FOR ANY
 DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
 GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
 INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER
```

```
 IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
 OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
 IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


The following license covers the files from Intel's "Highly Optimized
Mathematical Functions for Itanium" collection:

Intel License Agreement

Copyright (c) 2000, Intel Corporation

All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

* Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.

* The name of Intel Corporation may not be used to endorse or promote
products derived from this software without specific prior written
permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
"AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL INTEL OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


The files inet/getnameinfo.c and sysdeps/posix/getaddrinfo.c are copyright
(C) by Craig Metz and are distributed under the following license:

/* The Inner Net License, Version 2.00

  The author(s) grant permission for redistribution and use in source and
binary forms, with or without modification, of the software and documentation
provided that the following conditions are met:

0. If you receive a version of the software that is specifically labelled
   as not being for redistribution (check the version message and/or README),
   you are not permitted to redistribute that version of the software in any
   way or form.
1. All terms of the all other applicable copyrights and licenses must be
   followed.
2. Redistributions of source code must retain the authors' copyright
   notice(s), this list of conditions, and the following disclaimer.
```

3. Redistributions in binary form must reproduce the authors' copyright
   notice(s), this list of conditions, and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
4. [The copyright holder has authorized the removal of this clause.]
5. Neither the name(s) of the author(s) nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY ITS AUTHORS AND CONTRIBUTORS ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

  If these license terms cause you a real problem, contact the author. */

The file sunrpc/des_impl.c is copyright Eric Young:

Copyright (C) 1992 Eric Young
Collected from libdes and modified for SECURE RPC by Martin Kuck 1994
This file is distributed under the terms of the GNU Lesser General
Public License, version 2.1 or later - see the file COPYING.LIB for details.
If you did not receive a copy of the license with this program, please
see <http://www.gnu.org/licenses/> to obtain a copy.

The libidn code is copyright Simon Josefsson, with portions copyright
The Internet Society, Tom Tromey and Red Hat, Inc.:

Copyright (C) 2002, 2003, 2004, 2011 Simon Josefsson

This file is part of GNU Libidn.

GNU Libidn is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

GNU Libidn is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with GNU Libidn; if not, see <http://www.gnu.org/licenses/>.

The following notice applies to portions of libidn/nfkc.c:

This file contains functions from GLIB, including gutf8.c and
gunidecomp.c, all licensed under LGPL and copyright hold by:

Copyright (C) 1999, 2000 Tom Tromey
Copyright 2000 Red Hat, Inc.

```
The following applies to portions of libidn/punycode.c and
libidn/punycode.h:

This file is derived from RFC 3492bis written by Adam M. Costello.

Disclaimer and license: Regarding this entire document or any
portion of it (including the pseudocode and C code), the author
makes no guarantees and is not responsible for any damage resulting
from its use.  The author grants irrevocable permission to anyone
to use, modify, and distribute it in any way that does not diminish
the rights of anyone else to use, modify, and distribute it,
provided that redistributed derivative works do not contain
misleading author or version information.  Derivative works need
not be licensed under similar terms.

Copyright (C) The Internet Society (2003).  All Rights Reserved.

This document and translations of it may be copied and furnished to
others, and derivative works that comment on or otherwise explain it
or assist in its implementation may be prepared, copied, published
and distributed, in whole or in part, without restriction of any
kind, provided that the above copyright notice and this paragraph are
included on all such copies and derivative works.  However, this
document itself may not be modified in any way, such as by removing
the copyright notice or references to the Internet Society or other
Internet organizations, except as needed for the purpose of
developing Internet standards in which case the procedures for
copyrights defined in the Internet Standards process must be
followed, or as required to translate it into languages other than
English.

The limited permissions granted above are perpetual and will not be
revoked by the Internet Society or its successors or assigns.

This document and the information contained herein is provided on an
"AS IS" basis and THE INTERNET SOCIETY AND THE INTERNET ENGINEERING
TASK FORCE DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING
BUT NOT LIMITED TO ANY WARRANTY THAT THE USE OF THE INFORMATION
HEREIN WILL NOT INFRINGE ANY RIGHTS OR ANY IMPLIED WARRANTIES OF
MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.


The file inet/rcmd.c is under a UCB copyright and the following:

Copyright (C) 1998 WIDE Project.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the name of the project nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.
```

THIS SOFTWARE IS PROVIDED BY THE PROJECT AND CONTRIBUTORS ``AS IS'' AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED. IN NO EVENT SHALL THE PROJECT OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

The file posix/runtests.c is copyright Tom Lord:

Copyright 1995 by Tom Lord

                        All Rights Reserved

Permission to use, copy, modify, and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appear in all copies and that
both that copyright notice and this permission notice appear in
supporting documentation, and that the name of the copyright holder not be
used in advertising or publicity pertaining to distribution of the
software without specific, written prior permission.

Tom Lord DISCLAIMS ALL WARRANTIES WITH REGARD TO THIS SOFTWARE,
INCLUDING ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS, IN NO
EVENT SHALL TOM LORD BE LIABLE FOR ANY SPECIAL, INDIRECT OR
CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING FROM LOSS OF
USE, DATA OR PROFITS, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE OR
OTHER TORTIOUS ACTION, ARISING OUT OF OR IN CONNECTION WITH THE USE OR
PERFORMANCE OF THIS SOFTWARE.

The posix/rxspencer tests are copyright Henry Spencer:

Copyright 1992, 1993, 1994, 1997 Henry Spencer. All rights reserved.
This software is not subject to any license of the American Telephone
and Telegraph Company or of the Regents of the University of California.

Permission is granted to anyone to use this software for any purpose on
any computer system, and to alter it and redistribute it, subject
to the following restrictions:

1. The author is not responsible for the consequences of use of this
   software, no matter how awful, even if they arise from flaws in it.

2. The origin of this software must not be misrepresented, either by
   explicit claim or by omission. Since few users ever read sources,
   credits must appear in the documentation.

3. Altered versions must be plainly marked as such, and must not be
   misrepresented as being the original software. Since few users
   ever read sources, credits must appear in the documentation.

4. This notice may not be removed or altered.

```
The file posix/PCRE.tests is copyright University of Cambridge:

Copyright (c) 1997-2003 University of Cambridge

Permission is granted to anyone to use this software for any purpose on any
computer system, and to redistribute it freely, subject to the following
restrictions:

1. This software is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.

2. The origin of this software must not be misrepresented, either by
   explicit claim or by omission. In practice, this means that if you use
   PCRE in software that you distribute to others, commercially or
   otherwise, you must put a sentence like this

     Regular expression support is provided by the PCRE library package,
     which is open source software, written by Philip Hazel, and copyright
     by the University of Cambridge, England.

   somewhere reasonably visible in your documentation and in any relevant
   files or online help data or similar. A reference to the ftp site for
   the source, that is, to

     ftp://ftp.csx.cam.ac.uk/pub/software/programming/pcre/

   should also be given in the documentation. However, this condition is not
   intended to apply to whole chains of software. If package A includes PCRE,
   it must acknowledge it, but if package B is software that includes package
   A, the condition is not imposed on package B (unless it uses PCRE
   independently).

3. Altered versions must be plainly marked as such, and must not be
   misrepresented as being the original software.

4. If PCRE is embedded in any software that is released under the GNU
  General Purpose Licence (GPL), or Lesser General Purpose Licence (LGPL),
  then the terms of that licence shall supersede any condition above with
  which it is incompatible.


Files from Sun fdlibm are copyright Sun Microsystems, Inc.:

Copyright (C) 1993 by Sun Microsystems, Inc. All rights reserved.

Developed at SunPro, a Sun Microsystems, Inc. business.
Permission to use, copy, modify, and distribute this
software is freely granted, provided that this notice
is preserved.


Part of stdio-common/tst-printf.c is copyright C E Chew:

(C) Copyright C E Chew

Feel free to copy, use and distribute this software provided:
```

1. you do not pretend that you wrote it
2. you leave this copyright notice intact.

Various long double libm functions are copyright Stephen L. Moshier:

Copyright 2001 by Stephen L. Moshier <moshier@na-net.ornl.gov>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
Lesser General Public License for more details.

You should have received a copy of the GNU Lesser General Public
License along with this library; if not, see
<http://www.gnu.org/licenses/>. */

---

glibc/COPYING

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the

source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices
stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in
whole or in part contains or is derived from the Program or any
part thereof, to be licensed as a whole at no charge to all third
parties under the terms of this License.

c) If the modified program normally reads commands interactively
when run, you must cause it, when started running for such
interactive use in the most ordinary way, to print or display an
announcement including an appropriate copyright notice and a
notice that there is no warranty (or else, saying that you provide
a warranty) and that users may redistribute the program under
these conditions, and telling the user how to view a copy of this
License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable
source code, which must be distributed under the terms of Sections
1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three
years, to give any third party, for a charge no more than your
cost of physically performing source distribution, a complete
machine-readable copy of the corresponding source code, to be
distributed under the terms of Sections 1 and 2 above on a medium
customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer
to distribute corresponding source code. (This alternative is
allowed only for noncommercial distribution and only if you
received the program in object code or executable form with such
an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other

circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR

REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----
glibc/COPYING.LIB

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you. You must make sure that they, too, receive or can get the source
code. If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it. And you must show them these terms so they know their rights.

```
  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.


  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License.  This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License.  We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library.  The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom.  The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License.  It also provides other free software developers Less
of an advantage over competing non-free programs.  These disadvantages
are the reason we use the ordinary General Public License for many
libraries.  However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard.  To achieve this, non-free programs must be
allowed to use the library.  A more frequent case is that a free
library does the same job as widely used non-free libraries.  In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
```

linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

                GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion

of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

    (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for

that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the

Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

    e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

  It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

  7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on

the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities. This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License. Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License. However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Library or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.

  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is

implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING

RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice
```

That's all there is to it!

---

glibc/sysdeps/unix/sysv/linux/copy_file_range.c

```
/* Linux implementation of copy_file_range.
   Copyright (C) 2017-2018 Free Software Foundation, Inc.
   This file is part of the GNU C Library.

   The GNU C Library is free software; you can redistribute it and/or
```

```
   modify it under the terms of the GNU Lesser General Public
   License as published by the Free Software Foundation; either
   version 2.1 of the License, or (at your option) any later version.

   The GNU C Library is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
   Lesser General Public License for more details.

   You should have received a copy of the GNU Lesser General Public
   License along with the GNU C Library; if not, see
   <http://www.gnu.org/licenses/>.  */

#include <errno.h>
#include <sysdep-cancel.h>
#include <unistd.h>

/* Include the fallback implementation.  */
#ifndef __ASSUME_COPY_FILE_RANGE
#define COPY_FILE_RANGE_DECL static
#define COPY_FILE_RANGE copy_file_range_compat
#include <io/copy_file_range-compat.c>
#endif

ssize_t
copy_file_range (int infd, __off64_t *pinoff,
                 int outfd, __off64_t *poutoff,
                 size_t length, unsigned int flags)
{
#ifdef __NR_copy_file_range
  ssize_t ret = SYSCALL_CANCEL (copy_file_range, infd, pinoff, outfd, poutoff,
                                length, flags);
# ifndef __ASSUME_COPY_FILE_RANGE
  if (ret == -1 && errno == ENOSYS)
    ret = copy_file_range_compat (infd, pinoff, outfd, poutoff, length, flags);
# endif
  return ret;
#else  /* !__NR_copy_file_range */
  return copy_file_range_compat (infd, pinoff, outfd, poutoff, length, flags);
#endif
}
-----------------------------------------------------------------------
glibc/io/copy_file_range.c
-----------------------------------------------------------------------
/* Generic implementation of copy_file_range.
   Copyright (C) 2017-2018 Free Software Foundation, Inc.
   This file is part of the GNU C Library.

   The GNU C Library is free software; you can redistribute it and/or
   modify it under the terms of the GNU Lesser General Public
   License as published by the Free Software Foundation; either
   version 2.1 of the License, or (at your option) any later version.

   The GNU C Library is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
   Lesser General Public License for more details.

   You should have received a copy of the GNU Lesser General Public
```

```
   License along with the GNU C Library; if not, see
   <http://www.gnu.org/licenses/>.  */

#define COPY_FILE_RANGE_DECL
#define COPY_FILE_RANGE copy_file_range

#include <io/copy_file_range-compat.c>
----------------------------------------------------------------
glibc/io/copy_file_range-compat.c
----------------------------------------------------------------
/* Emulation of copy_file_range.
   Copyright (C) 2017-2018 Free Software Foundation, Inc.
   This file is part of the GNU C Library.

   The GNU C Library is free software; you can redistribute it and/or
   modify it under the terms of the GNU Lesser General Public
   License as published by the Free Software Foundation; either
   version 2.1 of the License, or (at your option) any later version.

   The GNU C Library is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
   Lesser General Public License for more details.

   You should have received a copy of the GNU Lesser General Public
   License along with the GNU C Library; if not, see
   <http://www.gnu.org/licenses/>.  */

/* The following macros should be defined before including this
   file:

   COPY_FILE_RANGE_DECL   Declaration specifiers for the function below.
   COPY_FILE_RANGE        Name of the function to define.  */

#include <errno.h>
#include <fcntl.h>
#include <inttypes.h>
#include <limits.h>
#include <sys/stat.h>
#include <sys/types.h>
#include <unistd.h>

COPY_FILE_RANGE_DECL
ssize_t
COPY_FILE_RANGE (int infd, __off64_t *pinoff,
                 int outfd, __off64_t *poutoff,
                 size_t length, unsigned int flags)
{
  if (flags != 0)
    {
      __set_errno (EINVAL);
      return -1;
    }

  {
    struct stat64 instat;
    struct stat64 outstat;
    if (fstat64 (infd, &instat) != 0 || fstat64 (outfd, &outstat) != 0)
      return -1;
```

```
  if (S_ISDIR (instat.st_mode) || S_ISDIR (outstat.st_mode))
    {
      __set_errno (EISDIR);
      return -1;
    }
  if (!S_ISREG (instat.st_mode) || !S_ISREG (outstat.st_mode))
    {
      /* We need a regular input file so that the we can seek
         backwards in case of a write failure.  */
      __set_errno (EINVAL);
      return -1;
    }
  if (instat.st_dev != outstat.st_dev)
    {
      /* Cross-device copies are not supported.  */
      __set_errno (EXDEV);
      return -1;
    }
}

/* The output descriptor must not have O_APPEND set.  */
{
  int flags = __fcntl (outfd, F_GETFL);
  if (flags & O_APPEND)
    {
      __set_errno (EBADF);
      return -1;
    }
}

/* Avoid an overflow in the result.  */
if (length > SSIZE_MAX)
  length = SSIZE_MAX;

/* Main copying loop.  The buffer size is arbitrary and is a
   trade-off between stack size consumption, cache usage, and
   amortization of system call overhead.  */
size_t copied = 0;
char buf[8192];
while (length > 0)
  {
    size_t to_read = length;
    if (to_read > sizeof (buf))
      to_read = sizeof (buf);

    /* Fill the buffer.  */
    ssize_t read_count;
    if (pinoff == NULL)
      read_count = read (infd, buf, to_read);
    else
      read_count = __libc_pread64 (infd, buf, to_read, *pinoff);
    if (read_count == 0)
      /* End of file reached prematurely.  */
      return copied;
    if (read_count < 0)
      {
        if (copied > 0)
          /* Report the number of bytes copied so far.  */
          return copied;
```

```
          return -1;
        }
      if (pinoff != NULL)
        *pinoff += read_count;

      /* Write the buffer part which was read to the destination.  */
      char *end = buf + read_count;
      for (char *p = buf; p < end; )
        {
          ssize_t write_count;
          if (poutoff == NULL)
            write_count = write (outfd, p, end - p);
          else
            write_count = __libc_pwrite64 (outfd, p, end - p, *poutoff);
          if (write_count < 0)
            {
              /* Adjust the input read position to match what we have
                 written, so that the caller can pick up after the
                 error.  */
              size_t written = p - buf;
              /* NB: This needs to be signed so that we can form the
                 negative value below.  */
              ssize_t overread = read_count - written;
              if (pinoff == NULL)
                {
                  if (overread > 0)
                    {
                      /* We are on an error recovery path, so we
                         cannot deal with failure here.  */
                      int save_errno = errno;
                      (void) __libc_lseek64 (infd, -overread, SEEK_CUR);
                      __set_errno (save_errno);
                    }
                }
              else /* pinoff != NULL */
                *pinoff -= overread;

              if (copied + written > 0)
                /* Report the number of bytes copied so far.  */
                return copied + written;
              return -1;
            }
          p += write_count;
          if (poutoff != NULL)
            *poutoff += write_count;
        } /* Write loop.  */

      copied += read_count;
      length -= read_count;
    }
  return copied;
}
```

---

glibc/posix/rxspencer/COPYRIGHT

```
Copyright 1992, 1993, 1994, 1997 Henry Spencer.  All rights reserved.
This software is not subject to any license of the American Telephone
and Telegraph Company or of the Regents of the University of California.
```

```
Permission is granted to anyone to use this software for any purpose on
any computer system, and to alter it and redistribute it, subject
to the following restrictions:

1. The author is not responsible for the consequences of use of this
   software, no matter how awful, even if they arise from flaws in it.

2. The origin of this software must not be misrepresented, either by
   explicit claim or by omission.  Since few users ever read sources,
   credits must appear in the documentation.

3. Altered versions must be plainly marked as such, and must not be
   misrepresented as being the original software.  Since few users
   ever read sources, credits must appear in the documentation.

4. This notice may not be removed or altered.
```

3.37 gmp

```
gmp
----------------------------------------------------------------------
gmp/mpn/ia64/copyd.asm
----------------------------------------------------------------------
dnl  IA-64 mpn_copyd -- copy limb vector, decrementing.

dnl  Contributed to the GNU project by Torbjorn Granlund.

dnl  Copyright 2001, 2002, 2004 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C         cycles/limb
C Itanium:    1
C Itanium 2:  0.5

C INPUT PARAMETERS
C rp = r32
C sp = r33
C n = r34

ASM_START()
PROLOGUE(mpn_copyd)
        .prologue
        .save ar.lc, r2
        .body
ifdef(`HAVE_ABI_32',
`       addp4           r32 = 0, r32
        addp4           r33 = 0, r33
```

```
        sxt4            r34 = r34
        ;;
')
{.mmi
        shladd          r32 = r34, 3, r32
        shladd          r33 = r34, 3, r33
        mov.i           r2 = ar.lc
}
{.mmi
        and             r14 = 3, r34
        cmp.ge          p14, p15 = 3, r34
        add             r34 = -4, r34
        ;;
}
{.mmi
        cmp.eq          p8, p0 = 1, r14
        cmp.eq          p10, p0 = 2, r14
        cmp.eq          p12, p0 = 3, r14
}
{.bbb
  (p8)  br.dptk         .Lb01
  (p10) br.dptk         .Lb10
  (p12) br.dptk         .Lb11
}

.Lb00:  C  n = 0, 4, 8, 12, ...
        add             r32 = -8, r32
        add             r33 = -8, r33
  (p14) br.dptk         .Ls00
        ;;
        add             r21 = -8, r33
        ld8             r16 = [r33], -16
        shr             r15 = r34, 2
        ;;
        ld8             r17 = [r21], -16
        mov.i           ar.lc = r15
        ld8             r18 = [r33], -16
        add             r20 = -8, r32
        ;;
        ld8             r19 = [r21], -16
        br.cloop.dptk   .Loop
        ;;
        br.sptk         .Lend
        ;;

.Lb01:  C  n = 1, 5, 9, 13, ...
        add             r21 = -8, r33
        add             r20 = -8, r32
        add             r33 = -16, r33
        add             r32 = -16, r32
        ;;
        ld8             r19 = [r21], -16
        shr             r15 = r34, 2
  (p14) br.dptk         .Ls01
        ;;
        ld8             r16 = [r33], -16
        mov.i           ar.lc = r15
        ;;
        ld8             r17 = [r21], -16
```

```
        ld8             r18 = [r33], -16
        br.sptk         .Li01
        ;;

.Lb10:  C  n = 2,6, 10, 14, ...
        add             r21 = -16, r33
        shr             r15 = r34, 2
        add             r20 = -16, r32
        add             r32 = -8, r32
        add             r33 = -8, r33
        ;;
        ld8             r18 = [r33], -16
        ld8             r19 = [r21], -16
        mov.i           ar.lc = r15
  (p14) br.dptk         .Ls10
        ;;
        ld8             r16 = [r33], -16
        ld8             r17 = [r21], -16
        br.sptk         .Li10
        ;;

.Lb11:  C  n = 3, 7, 11, 15, ...
        add             r21 = -8, r33
        add             r20 = -8, r32
        add             r33 = -16, r33
        add             r32 = -16, r32
        ;;
        ld8             r17 = [r21], -16
        shr             r15 = r34, 2
        ;;
        ld8             r18 = [r33], -16
        mov.i           ar.lc = r15
        ld8             r19 = [r21], -16
  (p14) br.dptk         .Ls11
        ;;
        ld8             r16 = [r33], -16
        br.sptk         .Li11
        ;;

        ALIGN(32)
.Loop:
.Li00:
{.mmb
        st8             [r32] = r16, -16
        ld8             r16 = [r33], -16
        nop.b           0
}
.Li11:
{.mmb
        st8             [r20] = r17, -16
        ld8             r17 = [r21], -16
        nop.b           0
        ;;
}
.Li10:
{.mmb
        st8             [r32] = r18, -16
        ld8             r18 = [r33], -16
        nop.b           0
```

```
}
.Li01:
{.mmb
        st8             [r20] = r19, -16
        ld8             r19 = [r21], -16
        br.cloop.dptk   .Loop
        ;;
}
.Lend:  st8             [r32] = r16, -16
.Ls11:  st8             [r20] = r17, -16
        ;;
.Ls10:  st8             [r32] = r18, -16
.Ls01:  st8             [r20] = r19, -16
.Ls00:  mov.i           ar.lc = r2
        br.ret.sptk.many b0
EPILOGUE()
ASM_END()
------------------------------------------------------------------
gmp/mpn/ia64/copyi.asm
------------------------------------------------------------------
dnl  IA-64 mpn_copyi -- copy limb vector, incrementing.

dnl  Contributed to the GNU project by Torbjorn Granlund.

dnl  Copyright 2001, 2002, 2004 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C         cycles/limb
C Itanium:    1
C Itanium 2:  0.5

C INPUT PARAMETERS
```

```
C rp = r32
C sp = r33
C n = r34

ASM_START()
PROLOGUE(mpn_copyi)
        .prologue
        .save ar.lc, r2
        .body
ifdef(`HAVE_ABI_32',
`       addp4           r32 = 0, r32
        addp4           r33 = 0, r33
        sxt4            r34 = r34
        ;;
')
{.mmi
        nop             0
        nop             0
        mov.i           r2 = ar.lc
}
{.mmi
        and             r14 = 3, r34
        cmp.ge          p14, p15 = 3, r34
        add             r34 = -4, r34
        ;;
}
{.mmi
        cmp.eq          p8, p0 = 1, r14
        cmp.eq          p10, p0 = 2, r14
        cmp.eq          p12, p0 = 3, r14
}
{.bbb
  (p8)  br.dptk         .Lb01
  (p10) br.dptk         .Lb10
  (p12) br.dptk         .Lb11
}

.Lb00:  C  n = 0, 4, 8, 12, ...
  (p14) br.dptk         .Ls00
        ;;
        add             r21 = 8, r33
        ld8             r16 = [r33], 16
        shr             r15 = r34, 2
        ;;
        ld8             r17 = [r21], 16
        mov.i           ar.lc = r15
        ld8             r18 = [r33], 16
        add             r20 = 8, r32
        ;;
        ld8             r19 = [r21], 16
        br.cloop.dptk   .Loop
        ;;
        br.sptk         .Lend
        ;;

.Lb01:  C  n = 1, 5, 9, 13, ...
        add             r21 = 0, r33
        add             r20 = 0, r32
        add             r33 = 8, r33
```

```
        add             r32 = 8, r32
        ;;
        ld8             r19 = [r21], 16
        shr             r15 = r34, 2
  (p14) br.dptk         .Ls01
        ;;
        ld8             r16 = [r33], 16
        mov.i           ar.lc = r15
        ;;
        ld8             r17 = [r21], 16
        ld8             r18 = [r33], 16
        br.sptk         .Li01
        ;;

.Lb10:  C  n = 2,6, 10, 14, ...
        add             r21 = 8, r33
        add             r20 = 8, r32
        ld8             r18 = [r33], 16
        shr             r15 = r34, 2
        ;;
        ld8             r19 = [r21], 16
        mov.i           ar.lc = r15
  (p14) br.dptk         .Ls10
        ;;
        ld8             r16 = [r33], 16
        ld8             r17 = [r21], 16
        br.sptk         .Li10
        ;;

.Lb11:  C  n = 3, 7, 11, 15, ...
        add             r21 = 0, r33
        add             r20 = 0, r32
        add             r33 = 8, r33
        add             r32 = 8, r32
        ;;
        ld8             r17 = [r21], 16
        shr             r15 = r34, 2
        ;;
        ld8             r18 = [r33], 16
        mov.i           ar.lc = r15
        ld8             r19 = [r21], 16
  (p14) br.dptk         .Ls11
        ;;
        ld8             r16 = [r33], 16
        br.sptk         .Li11
        ;;

        ALIGN(32)
.Loop:
.Li00:
{.mmb
        st8             [r32] = r16, 16
        ld8             r16 = [r33], 16
        nop.b           0
}
.Li11:
{.mmb
        st8             [r20] = r17, 16
        ld8             r17 = [r21], 16
```

```
        nop.b           0
        ;;
}
.Li10:
{.mmb
        st8             [r32] = r18, 16
        ld8             r18 = [r33], 16
        nop.b           0
}
.Li01:
{.mmb
        st8             [r20] = r19, 16
        ld8             r19 = [r21], 16
        br.cloop.dptk   .Loop
        ;;
}
.Lend:  st8             [r32] = r16, 16
.Ls11:  st8             [r20] = r17, 16
        ;;
.Ls10:  st8             [r32] = r18, 16
.Ls01:  st8             [r20] = r19, 16
.Ls00:  mov.i           ar.lc = r2
        br.ret.sptk.many b0
EPILOGUE()
ASM_END()
```

```
dnl  SPARC v9 mpn_copyd -- Copy a limb vector, decrementing.

dnl  Copyright 1999-2003 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')
```

```
C                  cycles/limb
C UltraSPARC 1&2:         2
C UltraSPARC 3:           2.5
C UltraSPARC T1:         17
C UltraSPARC T3:          6
C UltraSPARC T4/T5:       2

C INPUT PARAMETERS
C rptr  %o0
C sptr  %o1
C n     %o2

ASM_START()
        REGISTER(%g2,#scratch)
        REGISTER(%g3,#scratch)
PROLOGUE(mpn_copyd)
        sllx    %o2,3,%g1
        add     %g1,%o0,%o0
        add     %g1,%o1,%o1
        addcc   %o2,-8,%o2
        bl,pt   %xcc,L(end01234567)
        nop
L(loop1):
        ldx     [%o1-8],%g1
        ldx     [%o1-16],%g2
        ldx     [%o1-24],%g3
        ldx     [%o1-32],%g4
        ldx     [%o1-40],%g5
        ldx     [%o1-48],%o3
        ldx     [%o1-56],%o4
        ldx     [%o1-64],%o5
        add     %o1,-64,%o1
        stx     %g1,[%o0-8]
        stx     %g2,[%o0-16]
        stx     %g3,[%o0-24]
        stx     %g4,[%o0-32]
        stx     %g5,[%o0-40]
        stx     %o3,[%o0-48]
        stx     %o4,[%o0-56]
        stx     %o5,[%o0-64]
        addcc   %o2,-8,%o2
        bge,pt  %xcc,L(loop1)
        add     %o0,-64,%o0
L(end01234567):
        addcc   %o2,8,%o2
        bz,pn   %xcc,L(end)
        nop
L(loop2):
        ldx     [%o1-8],%g1
        add     %o1,-8,%o1
        addcc   %o2,-1,%o2
        stx     %g1,[%o0-8]
        bg,pt   %xcc,L(loop2)
        add     %o0,-8,%o0
L(end): retl
        nop
EPILOGUE(mpn_copyd)
--------------------------------------------------------------------
```

```
gmp/mpn/sparc64/copyi.asm
------------------------------------------------------------------
dnl  SPARC v9 mpn_copyi -- Copy a limb vector, incrementing.

dnl  Copyright 1999-2003 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                   cycles/limb
C UltraSPARC 1&2:        2
C UltraSPARC 3:          2.5
C UltraSPARC T1:        17
C UltraSPARC T3:         6
C UltraSPARC T4/T5:      2

C INPUT PARAMETERS
C rptr  %o0
C sptr  %o1
C n     %o2

ASM_START()
        REGISTER(%g2,#scratch)
        REGISTER(%g3,#scratch)
PROLOGUE(mpn_copyi)
        addcc   %o2,-8,%o2
        bl,pt   %xcc,L(end01234567)
        nop
L(loop1):
        ldx     [%o1+0],%g1
        ldx     [%o1+8],%g2
        ldx     [%o1+16],%g3
        ldx     [%o1+24],%g4
        ldx     [%o1+32],%g5
```

```
        ldx     [%o1+40],%o3
        ldx     [%o1+48],%o4
        ldx     [%o1+56],%o5
        add     %o1,64,%o1
        stx     %g1,[%o0+0]
        stx     %g2,[%o0+8]
        stx     %g3,[%o0+16]
        stx     %g4,[%o0+24]
        stx     %g5,[%o0+32]
        stx     %o3,[%o0+40]
        stx     %o4,[%o0+48]
        stx     %o5,[%o0+56]
        addcc   %o2,-8,%o2
        bge,pt  %xcc,L(loop1)
        add     %o0,64,%o0
L(end01234567):
        addcc   %o2,8,%o2
        bz,pn   %xcc,L(end)
        nop
L(loop2):
        ldx     [%o1+0],%g1
        add     %o1,8,%o1
        addcc   %o2,-1,%o2
        stx     %g1,[%o0+0]
        bg,pt   %xcc,L(loop2)
        add     %o0,8,%o0
L(end): retl
        nop
EPILOGUE(mpn_copyi)
------------------------------------------------------------------
gmp/mpn/arm/copyd.asm
------------------------------------------------------------------
dnl  ARM mpn_copyd.

dnl  Contributed to the GNU project by Robert Harley and Torbjörn Granlund.

dnl  Copyright 2003, 2012, 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
```

```
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C StrongARM      ?
C XScale         ?
C Cortex-A7      ?
C Cortex-A8      ?
C Cortex-A9      1.25-1.5
C Cortex-A15     1.25

C TODO
C  * Consider wider unrolling.  Analogous 8-way code runs 10% faster on both A9
C    and A15.  But it probably slows things down for 8 <= n < a few dozen.

define(`rp', `r0')
define(`up', `r1')
define(`n',  `r2')

ASM_START()
PROLOGUE(mpn_copyd)
        mov     r12, n, lsl #2
        sub     r12, r12, #4
        add     rp, rp, r12
        add     up, up, r12

        tst     n, #1
        beq     L(skip1)
        ldr     r3, [up], #-4
        str     r3, [rp], #-4
L(skip1):
        tst     n, #2
        beq     L(skip2)
        ldmda   up!, { r3,r12 }
        stmda   rp!, { r3,r12 }
L(skip2):
        bics    n, n, #3
        beq     L(rtn)

        push    { r4-r5 }
        subs    n, n, #4
        ldmda   up!, { r3,r4,r5,r12 }
        beq     L(end)

L(top): subs    n, n, #4
        stmda   rp!, { r3,r4,r5,r12 }
        ldmda   up!, { r3,r4,r5,r12 }
        bne     L(top)

L(end): stmda   rp, { r3,r4,r5,r12 }
        pop     { r4-r5 }
L(rtn): ret     lr
EPILOGUE()
-----------------------------------------------------------------
gmp/mpn/arm/copyi.asm
```

```
dnl  ARM mpn_copyi.

dnl  Contributed to the GNU project by Robert Harley and Torbjörn Granlund.

dnl  Copyright 2003, 2012, 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C StrongARM      ?
C XScale         ?
C Cortex-A7      ?
C Cortex-A8      ?
C Cortex-A9      1.25-1.5
C Cortex-A15     1.25

C TODO
C  * Consider wider unrolling.  Analogous 8-way code runs 10% faster on both A9
C    and A15.  But it probably slows things down for 8 <= n < a few dozen.

define(`rp', `r0')
define(`up', `r1')
define(`n',  `r2')

ASM_START()
PROLOGUE(mpn_copyi)
        tst     n, #1
        beq     L(skip1)
        ldr     r3, [up], #4
        str     r3, [rp], #4
L(skip1):
        tst     n, #2
```

```
        beq     L(skip2)
        ldmia   up!, { r3,r12 }
        stmia   rp!, { r3,r12 }
L(skip2):
        bics    n, n, #3
        beq     L(rtn)

        push    { r4-r5 }
        subs    n, n, #4
        ldmia   up!, { r3,r4,r5,r12 }
        beq     L(end)

L(top): subs    n, n, #4
        stmia   rp!, { r3,r4,r5,r12 }
        ldmia   up!, { r3,r4,r5,r12 }
        bne     L(top)

L(end): stm     rp, { r3,r4,r5,r12 }
        pop     { r4-r5 }
L(rtn): ret     lr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/arm/v7a/cora15/neon/copyd.asm
------------------------------------------------------------------
dnl  ARM Neon mpn_copyd optimised for A15.

dnl  Copyright 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C StrongARM      -
C XScale         -
```

```
C Cortex-A7      ?
C Cortex-A8      ?
C Cortex-A9      1.75           slower than core register code
C Cortex-A15     0.52

define(`rp', `r0')
define(`up', `r1')
define(`n',  `r2')

ASM_START()
PROLOGUE(mpn_copyd)
        add     rp, rp, n, lsl #2
        add     up, up, n, lsl #2

        cmp     n, #7
        ble     L(bc)

C Copy until rp is 128-bit aligned
        tst     rp, #4
        beq     L(al1)
        sub     up, up, #4
        vld1.32 {d22[0]}, [up]
        sub     n, n, #1
        sub     rp, rp, #4
        vst1.32 {d22[0]}, [rp]
L(al1): tst     rp, #8
        beq     L(al2)
        sub     up, up, #8
        vld1.32 {d22}, [up]
        sub     n, n, #2
        sub     rp, rp, #8
        vst1.32 {d22}, [rp:64]
L(al2): sub     up, up, #16
        vld1.32 {d26-d27}, [up]
        subs    n, n, #12
        sub     rp, rp, #16                     C offset rp for loop
        blt     L(end)

        sub     up, up, #16                     C offset up for loop
        mov     r12, #-16

        ALIGN(16)
L(top): vld1.32 {d22-d23}, [up], r12
        vst1.32 {d26-d27}, [rp:128], r12
        vld1.32 {d26-d27}, [up], r12
        vst1.32 {d22-d23}, [rp:128], r12
        subs    n, n, #8
        bge     L(top)

        add     up, up, #16                     C undo up offset
                                                C rp offset undoing folded
L(end): vst1.32 {d26-d27}, [rp:128]

C Copy last 0-7 limbs.  Note that rp is aligned after loop, but not when we
C arrive here via L(bc)
L(bc):  tst     n, #4
        beq     L(tl1)
        sub     up, up, #16
        vld1.32 {d22-d23}, [up]
```

```
        sub     rp, rp, #16
        vst1.32 {d22-d23}, [rp]
L(tl1): tst     n, #2
        beq     L(tl2)
        sub     up, up, #8
        vld1.32 {d22}, [up]
        sub     rp, rp, #8
        vst1.32 {d22}, [rp]
L(tl2): tst     n, #1
        beq     L(tl3)
        sub     up, up, #4
        vld1.32 {d22[0]}, [up]
        sub     rp, rp, #4
        vst1.32 {d22[0]}, [rp]
L(tl3): bx      lr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/arm/v7a/cora15/neon/copyi.asm
------------------------------------------------------------------
dnl  ARM Neon mpn_copyi optimised for A15.

dnl  Copyright 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C StrongARM      -
C XScale         -
C Cortex-A7      ?
C Cortex-A8      ?
C Cortex-A9      1.75           slower than core register code
C Cortex-A15     0.52
```

```
define(`rp', `r0')
define(`up', `r1')
define(`n',  `r2')

ASM_START()
PROLOGUE(mpn_copyi)
        cmp     n, #7
        ble     L(bc)

C Copy until rp is 128-bit aligned
        tst     rp, #4
        beq     L(al1)
        vld1.32 {d22[0]}, [up]!
        sub     n, n, #1
        vst1.32 {d22[0]}, [rp]!
L(al1): tst     rp, #8
        beq     L(al2)
        vld1.32 {d22}, [up]!
        sub     n, n, #2
        vst1.32 {d22}, [rp:64]!
L(al2): vld1.32 {d26-d27}, [up]!
        subs    n, n, #12
        blt     L(end)

        ALIGN(16)
L(top): vld1.32 {d22-d23}, [up]!
        vst1.32 {d26-d27}, [rp:128]!
        vld1.32 {d26-d27}, [up]!
        vst1.32 {d22-d23}, [rp:128]!
        subs    n, n, #8
        bge     L(top)

L(end): vst1.32 {d26-d27}, [rp:128]!

C Copy last 0-7 limbs.  Note that rp is aligned after loop, but not when we
C arrive here via L(bc)
L(bc):  tst     n, #4
        beq     L(tl1)
        vld1.32 {d22-d23}, [up]!
        vst1.32 {d22-d23}, [rp]!
L(tl1): tst     n, #2
        beq     L(tl2)
        vld1.32 {d22}, [up]!
        vst1.32 {d22}, [rp]!
L(tl2): tst     n, #1
        beq     L(tl3)
        vld1.32 {d22[0]}, [up]
        vst1.32 {d22[0]}, [rp]
L(tl3): bx      lr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/copyd.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 2003, 2005, 2007, 2011, 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
```

```
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C AMD K8,K9      1
C AMD K10        1
C AMD bd1        1.36
C AMD bobcat     1.71
C Intel P4       2-3
C Intel core2    1
C Intel NHM      1
C Intel SBR      1
C Intel atom     2
C VIA nano       2


IFSTD(`define(`rp',`%rdi')')
IFSTD(`define(`up',`%rsi')')
IFSTD(`define(`n', `%rdx')')

IFDOS(`define(`rp',`%rcx')')
IFDOS(`define(`up',`%rdx')')
IFDOS(`define(`n', `%r8')')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

ASM_START()
        TEXT
        ALIGN(64)
PROLOGUE(mpn_copyd)
        lea     -8(up,n,8), up
        lea     (rp,n,8), rp
        sub     $4, n
        jc      L(end)
        nop
```

```
L(top): mov     (up), %rax
        mov     -8(up), %r9
        lea     -32(rp), rp
        mov     -16(up), %r10
        mov     -24(up), %r11
        lea     -32(up), up
        mov     %rax, 24(rp)
        mov     %r9, 16(rp)
        sub     $4, n
        mov     %r10, 8(rp)
        mov     %r11, (rp)
        jnc     L(top)

L(end): shr     R32(n)
        jnc     1f
        mov     (up), %rax
        mov     %rax, -8(rp)
        lea     -8(rp), rp
        lea     -8(up), up
1:      shr     R32(n)
        jnc     1f
        mov     (up), %rax
        mov     -8(up), %r9
        mov     %rax, -8(rp)
        mov     %r9, -16(rp)
1:      ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/atom/copyd.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyd optimised for Intel Atom.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
```

```
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyd)
include_mpn(`x86_64/fastsse/copyd-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/atom/copyi.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyi optimised for Intel Atom.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyi)
include_mpn(`x86_64/fastsse/copyi-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/core2/copyd.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyd optimised for Intel Sandy Bridge.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
```

```
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyd)
include_mpn(`x86_64/fastsse/copyd-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/core2/copyi.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyi optimised for Intel Sandy Bridge.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
```

```
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyi)
include_mpn(`x86_64/fastsse/copyi-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/bobcat/copyd.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyd optimised for AMD bobcat.

dnl  Copyright 2003, 2005, 2007, 2011, 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C AMD K8,K9      1
C AMD K10        1-2  (alignment fluctuations)
C AMD bd1        ?
C AMD bobcat     1.5
C Intel P4       2.8
C Intel core2    1
C Intel NHM      1-1.25
C Intel SBR      1
C Intel atom     2.87
C VIA nano       2

C INPUT PARAMETERS
```

```
C rp    rdi
C up    rsi
C n     rdx

define(`rp',`%rdi')
define(`up',`%rsi')
define(`n',`%rdx')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

ASM_START()
        TEXT
        ALIGN(16)
PROLOGUE(mpn_copyd)
        FUNC_ENTRY(3)
        sub     $4, n
        jl      L(end)
        ALIGN(16)
L(top): mov     24(up,n,8), %r8
        mov     %r8, 24(rp,n,8)
        mov     16(up,n,8), %r8
        mov     %r8, 16(rp,n,8)
        mov     8(up,n,8), %r8
        mov     %r8, 8(rp,n,8)
        mov     (up,n,8), %r8
        mov     %r8, (rp,n,8)
L(ent): sub     $4, n
        jge     L(top)

L(end): cmp     $-4, R32(n)
        jz      L(ret)
        mov     24(up,n,8), %r8
        mov     %r8, 24(rp,n,8)
        cmp     $-3, R32(n)
        jz      L(ret)
        mov     16(up,n,8), %r8
        mov     %r8, 16(rp,n,8)
        cmp     $-2, R32(n)
        jz      L(ret)
        mov     8(up,n,8), %r8
        mov     %r8, 8(rp,n,8)

L(ret): FUNC_EXIT()
        ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/bobcat/copyi.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyi optimised for AMD bobcat.

dnl  Copyright 2003, 2005, 2007, 2011, 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
```

```
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C AMD K8,K9      1
C AMD K10        1-2  (alignment fluctuations)
C AMD bd1        ?
C AMD bobcat     1.5
C Intel P4       2.8
C Intel core2    1
C Intel NHM      1-1.25
C Intel SBR      1
C Intel atom     2.87
C VIA nano       2

C INPUT PARAMETERS
C rp    rdi
C up    rsi
C n     rdx

define(`rp',`%rdi')
define(`up',`%rsi')
define(`n',`%rdx')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

ASM_START()
        TEXT
        ALIGN(16)
PROLOGUE(mpn_copyi)
        FUNC_ENTRY(3)
        lea     -32(up,n,8), up
        lea     -32(rp,n,8), rp
        neg     n
        add     $4, n
        jg      L(end)
        ALIGN(16)
L(top): mov     (up,n,8), %r8
        mov     %r8, (rp,n,8)
```

```
        mov     8(up,n,8), %r8
        mov     %r8, 8(rp,n,8)
        mov     16(up,n,8), %r8
        mov     %r8, 16(rp,n,8)
        mov     24(up,n,8), %r8
        mov     %r8, 24(rp,n,8)
L(ent): add     $4, n
        jle     L(top)

L(end): cmp     $4, R32(n)
        jz      L(ret)
        mov     (up,n,8), %r8
        mov     %r8, (rp,n,8)
        cmp     $3, R32(n)
        jz      L(ret)
        mov     8(up,n,8), %r8
        mov     %r8, 8(rp,n,8)
        cmp     $2, R32(n)
        jz      L(ret)
        mov     16(up,n,8), %r8
        mov     %r8, 16(rp,n,8)

L(ret): FUNC_EXIT()
        ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/fastavx/copyd.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyd optimised for CPUs with fast AVX.

dnl  Copyright 2003, 2005, 2007, 2011-2013, 2015 Free Software Foundation, Inc.

dnl  Contributed to the GNU project by Torbjörn Granlund.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.
```

```
include(`../config.m4')

C            cycles/limb     cycles/limb     cycles/limb      good
C              aligned        unaligned       best seen      for cpu?
C AMD K8,K9     n/a
C AMD K10       n/a
C AMD bull      n/a
C AMD pile       4.87            4.87                          N
C AMD steam      ?               ?
C AMD bobcat    n/a
C AMD jaguar    n/a
C Intel P4      n/a
C Intel core    n/a
C Intel NHM     n/a
C Intel SBR      0.50            0.91                          N
C Intel IBR      0.50            0.65                          N
C Intel HWL      0.25            0.30                          Y
C Intel BWL      0.28            0.37                          Y
C Intel atom    n/a
C VIA nano      n/a

C We try to do as many 32-byte operations as possible.  The top-most and
C bottom-most writes might need 8-byte operations.  For the bulk copying, we
C write using aligned 32-byte operations, but we read with both aligned and
C unaligned 32-byte operations.

define(`rp', `%rdi')
define(`up', `%rsi')
define(`n',  `%rdx')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

dnl define(`vmovdqu', vlddqu)

ASM_START()
        TEXT
        ALIGN(32)
PROLOGUE(mpn_copyd)
        FUNC_ENTRY(3)

        lea     -32(rp,n,8), rp
        lea     -32(up,n,8), up

        cmp     $7, n                   C basecase needed for correctness
        jbe     L(bc)

        test    $8, R8(rp)              C is rp 16-byte aligned?
        jz      L(a2)                   C jump if rp aligned
        mov     24(up), %rax
        lea     -8(up), up
        mov     %rax, 24(rp)
        lea     -8(rp), rp
        dec     n
L(a2):  test    $16, R8(rp)             C is rp 32-byte aligned?
        jz      L(a3)                   C jump if rp aligned
        vmovdqu 16(up), %xmm0
        lea     -16(up), up
```

```
        vmovdqa %xmm0, 16(rp)
        lea     -16(rp), rp
        sub     $2, n
L(a3):  sub     $16, n
        jc      L(sma)

        ALIGN(16)
L(top): vmovdqu (up), %ymm0
        vmovdqu -32(up), %ymm1
        vmovdqu -64(up), %ymm2
        vmovdqu -96(up), %ymm3
        lea     -128(up), up
        vmovdqa %ymm0, (rp)
        vmovdqa %ymm1, -32(rp)
        vmovdqa %ymm2, -64(rp)
        vmovdqa %ymm3, -96(rp)
        lea     -128(rp), rp
L(ali): sub     $16, n
        jnc     L(top)

L(sma): test    $8, R8(n)
        jz      1f
        vmovdqu (up), %ymm0
        vmovdqu -32(up), %ymm1
        lea     -64(up), up
        vmovdqa %ymm0, (rp)
        vmovdqa %ymm1, -32(rp)
        lea     -64(rp), rp
1:
        test    $4, R8(n)
        jz      1f
        vmovdqu (up), %ymm0
        lea     -32(up), up
        vmovdqa %ymm0, (rp)
        lea     -32(rp), rp
1:
        test    $2, R8(n)
        jz      1f
        vmovdqu 16(up), %xmm0
        lea     -16(up), up
        vmovdqa %xmm0, 16(rp)
        lea     -16(rp), rp
1:
        test    $1, R8(n)
        jz      1f
        mov     24(up), %r8
        mov     %r8, 24(rp)
1:
        FUNC_EXIT()
        ret

        ALIGN(16)
L(bc):  test    $4, R8(n)
        jz      1f
        mov     24(up), %rax
        mov     16(up), %rcx
        mov     8(up), %r8
        mov     (up), %r9
        lea     -32(up), up
```

```
        mov     %rax, 24(rp)
        mov     %rcx, 16(rp)
        mov     %r8, 8(rp)
        mov     %r9, (rp)
        lea     -32(rp), rp
1:
        test    $2, R8(n)
        jz      1f
        mov     24(up), %rax
        mov     16(up), %rcx
        lea     -16(up), up
        mov     %rax, 24(rp)
        mov     %rcx, 16(rp)
        lea     -16(rp), rp
1:
        test    $1, R8(n)
        jz      1f
        mov     24(up), %rax
        mov     %rax, 24(rp)
1:
        FUNC_EXIT()
        ret
EPILOGUE()
----------------------------------------------------------------
gmp/mpn/x86_64/fastavx/copyi.asm
----------------------------------------------------------------
dnl  AMD64 mpn_copyi optimised for CPUs with fast AVX.

dnl  Copyright 2003, 2005, 2007, 2011-2013, 2015 Free Software Foundation, Inc.

dnl  Contributed to the GNU project by Torbjörn Granlund.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')
```

```
C            cycles/limb     cycles/limb     cycles/limb      good
C              aligned        unaligned       best seen      for cpu?
C AMD K8,K9     n/a
C AMD K10       n/a
C AMD bull      n/a
C AMD pile       4.87            4.87                          N
C AMD steam      ?               ?
C AMD bobcat    n/a
C AMD jaguar    n/a
C Intel P4      n/a
C Intel core    n/a
C Intel NHM     n/a
C Intel SBR      0.50            0.91                          N
C Intel IBR      0.50            0.65                          N
C Intel HWL      0.25            0.30                          Y
C Intel BWL      0.28            0.37                          Y
C Intel atom    n/a
C VIA nano      n/a

C We try to do as many 32-byte operations as possible.  The top-most and
C bottom-most writes might need 8-byte operations.  For the bulk copying, we
C write using aligned 32-byte operations, but we read with both aligned and
C unaligned 32-byte operations.

define(`rp', `%rdi')
define(`up', `%rsi')
define(`n',  `%rdx')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

dnl define(`vmovdqu', vlddqu)

ASM_START()
        TEXT
        ALIGN(32)
PROLOGUE(mpn_copyi)
        FUNC_ENTRY(3)

        cmp     $7, n
        jbe     L(bc)

        test    $8, R8(rp)              C is rp 16-byte aligned?
        jz      L(a2)                   C jump if rp aligned
        mov     (up), %rax
        lea     8(up), up
        mov     %rax, (rp)
        lea     8(rp), rp
        dec     n
L(a2):  test    $16, R8(rp)             C is rp 32-byte aligned?
        jz      L(a3)                   C jump if rp aligned
        vmovdqu (up), %xmm0
        lea     16(up), up
        vmovdqa %xmm0, (rp)
        lea     16(rp), rp
        sub     $2, n
L(a3):  sub     $16, n
        jc      L(sma)
```

```
        ALIGN(16)
L(top): vmovdqu (up), %ymm0
        vmovdqu 32(up), %ymm1
        vmovdqu 64(up), %ymm2
        vmovdqu 96(up), %ymm3
        lea     128(up), up
        vmovdqa %ymm0, (rp)
        vmovdqa %ymm1, 32(rp)
        vmovdqa %ymm2, 64(rp)
        vmovdqa %ymm3, 96(rp)
        lea     128(rp), rp
L(ali): sub     $16, n
        jnc     L(top)

L(sma): test    $8, R8(n)
        jz      1f
        vmovdqu (up), %ymm0
        vmovdqu 32(up), %ymm1
        lea     64(up), up
        vmovdqa %ymm0, (rp)
        vmovdqa %ymm1, 32(rp)
        lea     64(rp), rp
1:
        test    $4, R8(n)
        jz      1f
        vmovdqu (up), %ymm0
        lea     32(up), up
        vmovdqa %ymm0, (rp)
        lea     32(rp), rp
1:
        test    $2, R8(n)
        jz      1f
        vmovdqu (up), %xmm0
        lea     16(up), up
        vmovdqa %xmm0, (rp)
        lea     16(rp), rp
1:
L(end): test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)
1:
        FUNC_EXIT()
        ret

        ALIGN(16)
L(bc):  test    $4, R8(n)
        jz      1f
        mov     (up), %rax
        mov     8(up), %rcx
        mov     16(up), %r8
        mov     24(up), %r9
        lea     32(up), up
        mov     %rax, (rp)
        mov     %rcx, 8(rp)
        mov     %r8, 16(rp)
        mov     %r9, 24(rp)
        lea     32(rp), rp
```

```
1:
        test    $2, R8(n)
        jz      1f
        mov     (up), %rax
        mov     8(up), %rcx
        lea     16(up), up
        mov     %rax, (rp)
        mov     %rcx, 8(rp)
        lea     16(rp), rp
1:
        test    $1, R8(n)
        jz      1f
        mov     (up), %rax
        mov     %rax, (rp)
1:
        FUNC_EXIT()
        ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/copyi.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyi -- copy limb vector, incrementing.

dnl  Copyright 2003, 2005, 2007, 2011, 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C AMD K8,K9      1
C AMD K10        1
C AMD bd1        1.36
C AMD bobcat     1.71
C Intel P4       2-3
```

```
C Intel core2    1
C Intel NHM      1
C Intel SBR      1
C Intel atom     2
C VIA nano       2


IFSTD(`define(`rp',`%rdi')')
IFSTD(`define(`up',`%rsi')')
IFSTD(`define(`n', `%rdx')')

IFDOS(`define(`rp',`%rcx')')
IFDOS(`define(`up',`%rdx')')
IFDOS(`define(`n', `%r8')')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

ASM_START()
        TEXT
        ALIGN(64)
        .byte   0,0,0,0,0,0
PROLOGUE(mpn_copyi)
        lea     -8(rp), rp
        sub     $4, n
        jc      L(end)

L(top): mov     (up), %rax
        mov     8(up), %r9
        lea     32(rp), rp
        mov     16(up), %r10
        mov     24(up), %r11
        lea     32(up), up
        mov     %rax, -24(rp)
        mov     %r9, -16(rp)
        sub     $4, n
        mov     %r10, -8(rp)
        mov     %r11, (rp)
        jnc     L(top)

L(end): shr     R32(n)
        jnc     1f
        mov     (up), %rax
        mov     %rax, 8(rp)
        lea     8(rp), rp
        lea     8(up), up
1:      shr     R32(n)
        jnc     1f
        mov     (up), %rax
        mov     8(up), %r9
        mov     %rax, 8(rp)
        mov     %r9, 16(rp)
1:      ret
EPILOGUE()
--------------------------------------------------------------------
gmp/mpn/x86_64/bd1/copyd.asm
--------------------------------------------------------------------
dnl  X86-64 mpn_copyd optimised for AMD bd1.
```

```
dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyd)
include_mpn(`x86_64/fastsse/copyd-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/bd1/copyi.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyi optimised for AMD bd1.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
```

```
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyi)
include_mpn(`x86_64/fastsse/copyi-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/fastsse/copyd.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyd optimised for CPUs with fast SSE.

dnl  Copyright 2003, 2005, 2007, 2011, 2012, 2015 Free Software Foundation,
dnl  Inc.

dnl  Contributed to the GNU project by Torbjörn Granlund.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C             cycles/limb     cycles/limb     cycles/limb      good
C               aligned        unaligned       best seen      for cpu?
C AMD K8,K9
C AMD K10        0.85            1.64                            Y/N
C AMD bull       1.4             1.4                             Y
```

```
C AMD pile       0.68            0.98                          Y/N
C AMD steam
C AMD excavator
C AMD bobcat
C AMD jaguar     0.65            1.02          opt/0.93        Y/N
C Intel P4       2.3             2.3                           Y
C Intel core     1.0             1.0           0.52/0.80       N
C Intel NHM      0.5             0.67                          Y
C Intel SBR      0.51            0.75          opt/0.54        Y/N
C Intel IBR      0.50            0.57          opt/0.50        Y
C Intel HWL      0.50            0.57          opt/0.51        Y
C Intel BWL      0.55            0.62          opt/0.55        Y
C Intel atom
C Intel SLM      1.02            1.27          opt/1.04        Y/N
C VIA nano       1.16            5.16                          Y/N

C We try to do as many 16-byte operations as possible.  The top-most and
C bottom-most writes might need 8-byte operations.  We can always write using
C aligned 16-byte operations, we read with both aligned and unaligned 16-byte
C operations.

C Instead of having separate loops for reading aligned and unaligned, we read
C using MOVDQU.  This seems to work great except for core2; there performance
C doubles when reading using MOVDQA (for aligned source).  It is unclear how to
C best handle the unaligned case there.

C INPUT PARAMETERS
define(`rp', `%rdi')
define(`up', `%rsi')
define(`n',  `%rdx')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

dnl define(`movdqu', lddqu)

ASM_START()
        TEXT
        ALIGN(16)
PROLOGUE(mpn_copyd)
        FUNC_ENTRY(3)

        test    n, n
        jz      L(don)

        lea     -16(rp,n,8), rp
        lea     -16(up,n,8), up

        test    $8, R8(rp)              C is rp 16-byte aligned?
        jz      L(ali)                  C jump if rp aligned
        mov     8(up), %rax
        lea     -8(up), up
        mov     %rax, 8(rp)
        lea     -8(rp), rp
        dec     n

        sub     $16, n
        jc      L(sma)
```

```
        ALIGN(16)
L(top): movdqu  (up), %xmm0
        movdqu  -16(up), %xmm1
        movdqu  -32(up), %xmm2
        movdqu  -48(up), %xmm3
        movdqu  -64(up), %xmm4
        movdqu  -80(up), %xmm5
        movdqu  -96(up), %xmm6
        movdqu  -112(up), %xmm7
        lea     -128(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, -16(rp)
        movdqa  %xmm2, -32(rp)
        movdqa  %xmm3, -48(rp)
        movdqa  %xmm4, -64(rp)
        movdqa  %xmm5, -80(rp)
        movdqa  %xmm6, -96(rp)
        movdqa  %xmm7, -112(rp)
        lea     -128(rp), rp
L(ali): sub     $16, n
        jnc     L(top)

L(sma): test    $8, R8(n)
        jz      1f
        movdqu  (up), %xmm0
        movdqu  -16(up), %xmm1
        movdqu  -32(up), %xmm2
        movdqu  -48(up), %xmm3
        lea     -64(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, -16(rp)
        movdqa  %xmm2, -32(rp)
        movdqa  %xmm3, -48(rp)
        lea     -64(rp), rp
1:
        test    $4, R8(n)
        jz      1f
        movdqu  (up), %xmm0
        movdqu  -16(up), %xmm1
        lea     -32(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, -16(rp)
        lea     -32(rp), rp
1:
        test    $2, R8(n)
        jz      1f
        movdqu  (up), %xmm0
        lea     -16(up), up
        movdqa  %xmm0, (rp)
        lea     -16(rp), rp
1:
        test    $1, R8(n)
        jz      1f
        mov     8(up), %r8
        mov     %r8, 8(rp)
1:
L(don): FUNC_EXIT()
        ret
EPILOGUE()
```

```
------------------------------------------------------------------
gmp/mpn/x86_64/fastsse/copyi-palignr.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyi optimised for CPUs with fast SSE copying and SSSE3.

dnl  Copyright 2012, 2013, 2015 Free Software Foundation, Inc.

dnl  Contributed to the GNU project by Torbjörn Granlund.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C             cycles/limb     cycles/limb     cycles/limb      good
C               aligned        unaligned       best seen      for cpu?
C AMD K8,K9      2.0             illop          1.0/1.0         N
C AMD K10        0.85            illop                          Y/N
C AMD bull       0.70            0.66                           Y
C AMD pile       0.68            0.66                           Y
C AMD steam      ?               ?
C AMD excavator  ?               ?
C AMD bobcat     1.97            8.16           1.5/1.5         N
C AMD jaguar     0.77            0.93           0.65/opt        N/Y
C Intel P4       2.26            illop                          Y/N
C Intel core     0.52            0.64           opt/opt         Y
C Intel NHM      0.52            0.71           opt/opt         Y
C Intel SBR      0.51            0.54           opt/0.51        Y
C Intel IBR      0.50            0.54           opt/opt         Y
C Intel HWL      0.50            0.51           opt/opt         Y
C Intel BWL      0.55            0.55           opt/opt         Y
C Intel atom     1.16            1.61           opt/opt         Y
C Intel SLM      1.02            1.07           opt/opt         Y
C VIA nano       1.09            1.08           opt/opt         Y

C We use only 16-byte operations, except for unaligned top-most and bottom-most
```

```
C limbs.  We use the SSSE3 palignr instruction when rp - up = 8 (mod 16).  That
C instruction is better adapted to mpn_copyd's needs, we need to contort the
C code to use it here.
C
C For operands of < COPYI_SSE_THRESHOLD limbs, we use a plain 64-bit loop,
C taken from the x86_64 default code.

C INPUT PARAMETERS
define(`rp', `%rdi')
define(`up', `%rsi')
define(`n',  `%rdx')

C There are three instructions for loading an aligned 128-bit quantity.  We use
C movaps, since it has the shortest coding.
dnl define(`movdqa', ``movaps'')

ifdef(`COPYI_SSE_THRESHOLD',`',`define(`COPYI_SSE_THRESHOLD', 7)')

ASM_START()
        TEXT
        ALIGN(64)
PROLOGUE(mpn_copyi)
        FUNC_ENTRY(3)

        cmp     $COPYI_SSE_THRESHOLD, n
        jbe     L(bc)

        test    $8, R8(rp)              C is rp 16-byte aligned?
        jz      L(rp_aligned)           C jump if rp aligned

        movsq                           C copy one limb
        dec     n

L(rp_aligned):
        test    $8, R8(up)
        jnz     L(uent)

ifelse(eval(COPYI_SSE_THRESHOLD >= 8),1,
`       sub     $8, n',
`       jmp     L(am)')

        ALIGN(16)
L(atop):movdqa  0(up), %xmm0
        movdqa  16(up), %xmm1
        movdqa  32(up), %xmm2
        movdqa  48(up), %xmm3
        lea     64(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, 16(rp)
        movdqa  %xmm2, 32(rp)
        movdqa  %xmm3, 48(rp)
        lea     64(rp), rp
L(am):  sub     $8, n
        jnc     L(atop)

        test    $4, R8(n)
        jz      1f
        movdqa  (up), %xmm0
        movdqa  16(up), %xmm1
```

```
        lea     32(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, 16(rp)
        lea     32(rp), rp

1:      test    $2, R8(n)
        jz      1f
        movdqa  (up), %xmm0
        lea     16(up), up
        movdqa  %xmm0, (rp)
        lea     16(rp), rp

1:      test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)

1:      FUNC_EXIT()
        ret

L(uent):
C Code handling up - rp = 8 (mod 16)

        cmp     $16, n
        jc      L(ued0)

IFDOS(` add     $-56, %rsp      ')
IFDOS(` movdqa  %xmm6, (%rsp)   ')
IFDOS(` movdqa  %xmm7, 16(%rsp) ')
IFDOS(` movdqa  %xmm8, 32(%rsp) ')

        movaps  120(up), %xmm7
        movaps  104(up), %xmm6
        movaps  88(up), %xmm5
        movaps  72(up), %xmm4
        movaps  56(up), %xmm3
        movaps  40(up), %xmm2
        lea     128(up), up
        sub     $32, n
        jc      L(ued1)

        ALIGN(16)
L(utop):movaps  -104(up), %xmm1
        sub     $16, n
        movaps  -120(up), %xmm0
        palignr($8, %xmm6, %xmm7)
        movaps  -136(up), %xmm8
        movdqa  %xmm7, 112(rp)
        palignr($8, %xmm5, %xmm6)
        movaps  120(up), %xmm7
        movdqa  %xmm6, 96(rp)
        palignr($8, %xmm4, %xmm5)
        movaps  104(up), %xmm6
        movdqa  %xmm5, 80(rp)
        palignr($8, %xmm3, %xmm4)
        movaps  88(up), %xmm5
        movdqa  %xmm4, 64(rp)
        palignr($8, %xmm2, %xmm3)
        movaps  72(up), %xmm4
```

```
        movdqa  %xmm3, 48(rp)
        palignr($8, %xmm1, %xmm2)
        movaps  56(up), %xmm3
        movdqa  %xmm2, 32(rp)
        palignr($8, %xmm0, %xmm1)
        movaps  40(up), %xmm2
        movdqa  %xmm1, 16(rp)
        palignr($8, %xmm8, %xmm0)
        lea     128(up), up
        movdqa  %xmm0, (rp)
        lea     128(rp), rp
        jnc     L(utop)

L(ued1):movaps  -104(up), %xmm1
        movaps  -120(up), %xmm0
        movaps  -136(up), %xmm8
        palignr($8, %xmm6, %xmm7)
        movdqa  %xmm7, 112(rp)
        palignr($8, %xmm5, %xmm6)
        movdqa  %xmm6, 96(rp)
        palignr($8, %xmm4, %xmm5)
        movdqa  %xmm5, 80(rp)
        palignr($8, %xmm3, %xmm4)
        movdqa  %xmm4, 64(rp)
        palignr($8, %xmm2, %xmm3)
        movdqa  %xmm3, 48(rp)
        palignr($8, %xmm1, %xmm2)
        movdqa  %xmm2, 32(rp)
        palignr($8, %xmm0, %xmm1)
        movdqa  %xmm1, 16(rp)
        palignr($8, %xmm8, %xmm0)
        movdqa  %xmm0, (rp)
        lea     128(rp), rp

IFDOS(` movdqa  (%rsp), %xmm6   ')
IFDOS(` movdqa  16(%rsp), %xmm7 ')
IFDOS(` movdqa  32(%rsp), %xmm8 ')
IFDOS(` add     $56, %rsp       ')

L(ued0):test    $8, R8(n)
        jz      1f
        movaps  56(up), %xmm3
        movaps  40(up), %xmm2
        movaps  24(up), %xmm1
        movaps  8(up), %xmm0
        movaps  -8(up), %xmm4
        palignr($8, %xmm2, %xmm3)
        movdqa  %xmm3, 48(rp)
        palignr($8, %xmm1, %xmm2)
        movdqa  %xmm2, 32(rp)
        palignr($8, %xmm0, %xmm1)
        movdqa  %xmm1, 16(rp)
        palignr($8, %xmm4, %xmm0)
        lea     64(up), up
        movdqa  %xmm0, (rp)
        lea     64(rp), rp

1:      test    $4, R8(n)
        jz      1f
```

```
        movaps  24(up), %xmm1
        movaps  8(up), %xmm0
        palignr($8, %xmm0, %xmm1)
        movaps  -8(up), %xmm3
        movdqa  %xmm1, 16(rp)
        palignr($8, %xmm3, %xmm0)
        lea     32(up), up
        movdqa  %xmm0, (rp)
        lea     32(rp), rp

1:      test    $2, R8(n)
        jz      1f
        movdqa  8(up), %xmm0
        movdqa  -8(up), %xmm3
        palignr($8, %xmm3, %xmm0)
        lea     16(up), up
        movdqa  %xmm0, (rp)
        lea     16(rp), rp

1:      test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)

1:      FUNC_EXIT()
        ret

C Basecase code.  Needed for good small operands speed, not for
C correctness as the above code is currently written.

L(bc):  lea     -8(rp), rp
        sub     $4, R32(n)
        jc      L(end)

        ALIGN(16)
L(top): mov     (up), %r8
        mov     8(up), %r9
        lea     32(rp), rp
        mov     16(up), %r10
        mov     24(up), %r11
        lea     32(up), up
        mov     %r8, -24(rp)
        mov     %r9, -16(rp)
ifelse(eval(COPYI_SSE_THRESHOLD >= 8),1,
`       sub     $4, R32(n)')
        mov     %r10, -8(rp)
        mov     %r11, (rp)
ifelse(eval(COPYI_SSE_THRESHOLD >= 8),1,
`       jnc     L(top)')

L(end): test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, 8(rp)
        lea     8(rp), rp
        lea     8(up), up
1:      test    $2, R8(n)
        jz      1f
        mov     (up), %r8
```

```
        mov     8(up), %r9
        mov     %r8, 8(rp)
        mov     %r9, 16(rp)
1:      FUNC_EXIT()
        ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/fastsse/copyi.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyi optimised for CPUs with fast SSE.

dnl  Copyright 2003, 2005, 2007, 2011, 2012, 2015 Free Software Foundation,
dnl  Inc.

dnl  Contributed to the GNU project by Torbjörn Granlund.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb     cycles/limb     cycles/limb      good
C              aligned        unaligned       best seen      for cpu?
C AMD K8,K9
C AMD K10        0.85            1.64                           Y/N
C AMD bull       1.4             1.4                            N
C AMD pile       0.77            0.93                           N
C AMD steam      ?               ?
C AMD excavator  ?               ?
C AMD bobcat
C AMD jaguar     0.65            1.02           opt/0.93        Y/N
C Intel P4       2.3             2.3                            Y
C Intel core     1.0             1.0            0.52/0.64       N
C Intel NHM      0.5             0.67                           Y
C Intel SBR      0.51            0.75           opt/0.54        Y/N
C Intel IBR      0.50            0.57           opt/0.54        Y
```

```
C Intel HWL      0.50            0.57           opt/0.51        Y
C Intel BWL      0.55            0.62           opt/0.55        Y
C Intel atom
C Intel SLM      1.02            1.27           opt/1.07        Y/N
C VIA nano       1.16            5.16                           Y/N

C We try to do as many 16-byte operations as possible.  The top-most and
C bottom-most writes might need 8-byte operations.  We can always write using
C aligned 16-byte operations, we read with both aligned and unaligned 16-byte
C operations.

C Instead of having separate loops for reading aligned and unaligned, we read
C using MOVDQU.  This seems to work great except for core2; there performance
C doubles when reading using MOVDQA (for aligned source).  It is unclear how to
C best handle the unaligned case there.

C INPUT PARAMETERS
define(`rp', `%rdi')
define(`up', `%rsi')
define(`n',  `%rdx')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

dnl define(`movdqu', lddqu)

ASM_START()
        TEXT
        ALIGN(64)
PROLOGUE(mpn_copyi)
        FUNC_ENTRY(3)

        cmp     $3, n                   C NB: bc code below assumes this limit
        jc      L(bc)

        test    $8, R8(rp)              C is rp 16-byte aligned?
        jz      L(ali)                  C jump if rp aligned
        movsq                           C copy single limb
        dec     n

        sub     $16, n
        jc      L(sma)

        ALIGN(16)
L(top): movdqu  (up), %xmm0
        movdqu  16(up), %xmm1
        movdqu  32(up), %xmm2
        movdqu  48(up), %xmm3
        movdqu  64(up), %xmm4
        movdqu  80(up), %xmm5
        movdqu  96(up), %xmm6
        movdqu  112(up), %xmm7
        lea     128(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, 16(rp)
        movdqa  %xmm2, 32(rp)
        movdqa  %xmm3, 48(rp)
        movdqa  %xmm4, 64(rp)
        movdqa  %xmm5, 80(rp)
```

```
        movdqa  %xmm6, 96(rp)
        movdqa  %xmm7, 112(rp)
        lea     128(rp), rp
L(ali): sub     $16, n
        jnc     L(top)

L(sma): test    $8, R8(n)
        jz      1f
        movdqu  (up), %xmm0
        movdqu  16(up), %xmm1
        movdqu  32(up), %xmm2
        movdqu  48(up), %xmm3
        lea     64(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, 16(rp)
        movdqa  %xmm2, 32(rp)
        movdqa  %xmm3, 48(rp)
        lea     64(rp), rp
1:
        test    $4, R8(n)
        jz      1f
        movdqu  (up), %xmm0
        movdqu  16(up), %xmm1
        lea     32(up), up
        movdqa  %xmm0, (rp)
        movdqa  %xmm1, 16(rp)
        lea     32(rp), rp
1:
        test    $2, R8(n)
        jz      1f
        movdqu  (up), %xmm0
        lea     16(up), up
        movdqa  %xmm0, (rp)
        lea     16(rp), rp
        ALIGN(16)
1:
L(end): test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)
1:
        FUNC_EXIT()
        ret

C Basecase code.  Needed for good small operands speed, not for correctness as
C the above code is currently written.  The commented-out lines need to be
C reinstated if this code is to be used for n > 3, and then the post loop
C offsets need fixing.

L(bc):  sub     $2, n
        jc      L(end)
        ALIGN(16)
1:      mov     (up), %rax
        mov     8(up), %rcx
dnl     lea     16(up), up
        mov     %rax, (rp)
        mov     %rcx, 8(rp)
dnl     lea     16(rp), rp
dnl     sub     $2, n
```

```
dnl     jnc     1b

        test    $1, R8(n)
        jz      L(ret)
        mov     16(up), %rax
        mov     %rax, 16(rp)
L(ret): FUNC_EXIT()
        ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/fastsse/copyd-palignr.asm
------------------------------------------------------------------
dnl  AMD64 mpn_copyd optimised for CPUs with fast SSE copying and SSSE3.

dnl  Copyright 2012, 2015 Free Software Foundation, Inc.

dnl  Contributed to the GNU project by Torbjorn Granlund.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb     cycles/limb     cycles/limb      good
C              aligned        unaligned       best seen      for cpu?
C AMD K8,K9      2.0             illop          1.0/1.0         N
C AMD K10        0.85            illop                          Y/N
C AMD bull       0.70            0.70                           Y
C AMD pile       0.68            0.68                           Y
C AMD steam
C AMD excavator
C AMD bobcat     1.97            8.24           1.5/1.5         N
C AMD jaguar     0.77            0.89           0.65/opt        N/Y
C Intel P4       2.26            illop                          Y/N
C Intel core     0.52            0.80           opt/opt         Y
C Intel NHM      0.52            0.64           opt/opt         Y
```

```
C Intel SBR      0.51            0.51           opt/opt         Y
C Intel IBR      0.50            0.50           opt/opt         Y
C Intel HWL      0.50            0.51           opt/opt         Y
C Intel BWL      0.55            0.55           opt/opt         Y
C Intel atom     1.16            1.66           opt/opt         Y
C Intel SLM      1.02            1.04           opt/opt         Y
C VIA nano       1.08            1.06           opt/opt         Y

C We use only 16-byte operations, except for unaligned top-most and bottom-most
C limbs.  We use the SSSE3 palignr instruction when rp - up = 8 (mod 16).
C
C For operands of < COPYD_SSE_THRESHOLD limbs, we use a plain 64-bit loop,
C taken from the x86_64 default code.

C INPUT PARAMETERS
define(`rp', `%rdi')
define(`up', `%rsi')
define(`n',  `%rdx')

C There are three instructions for loading an aligned 128-bit quantity.  We use
C movaps, since it has the shortest coding.
define(`movdqa', ``movaps'')

ifdef(`COPYD_SSE_THRESHOLD',`',`define(`COPYD_SSE_THRESHOLD', 7)')

ASM_START()
        TEXT
        ALIGN(64)
PROLOGUE(mpn_copyd)
        FUNC_ENTRY(3)

        lea     -8(up,n,8), up
        lea     -8(rp,n,8), rp

        cmp     $COPYD_SSE_THRESHOLD, n
        jbe     L(bc)

        test    $8, R8(rp)              C is rp 16-byte aligned?
        jnz     L(rp_aligned)           C jump if rp aligned

        mov     (up), %rax              C copy one limb
        mov     %rax, (rp)
        lea     -8(up), up
        lea     -8(rp), rp
        dec     n

L(rp_aligned):
        test    $8, R8(up)
        jz      L(uent)

ifelse(eval(COPYD_SSE_THRESHOLD >= 8),1,
`       sub     $8, n',
`       jmp     L(am)')

        ALIGN(16)
L(atop):movdqa  -8(up), %xmm0
        movdqa  -24(up), %xmm1
        movdqa  -40(up), %xmm2
        movdqa  -56(up), %xmm3
```

```
        lea     -64(up), up
        movdqa  %xmm0, -8(rp)
        movdqa  %xmm1, -24(rp)
        movdqa  %xmm2, -40(rp)
        movdqa  %xmm3, -56(rp)
        lea     -64(rp), rp
L(am):  sub     $8, n
        jnc     L(atop)

        test    $4, R8(n)
        jz      1f
        movdqa  -8(up), %xmm0
        movdqa  -24(up), %xmm1
        lea     -32(up), up
        movdqa  %xmm0, -8(rp)
        movdqa  %xmm1, -24(rp)
        lea     -32(rp), rp

1:      test    $2, R8(n)
        jz      1f
        movdqa  -8(up), %xmm0
        lea     -16(up), up
        movdqa  %xmm0, -8(rp)
        lea     -16(rp), rp

1:      test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)

1:      FUNC_EXIT()
        ret

L(uent):sub     $16, n
        movdqa  (up), %xmm0
        jc      L(uend)

        ALIGN(16)
L(utop):sub     $16, n
        movdqa  -16(up), %xmm1
        palignr($8, %xmm1, %xmm0)
        movdqa  %xmm0, -8(rp)
        movdqa  -32(up), %xmm2
        palignr($8, %xmm2, %xmm1)
        movdqa  %xmm1, -24(rp)
        movdqa  -48(up), %xmm3
        palignr($8, %xmm3, %xmm2)
        movdqa  %xmm2, -40(rp)
        movdqa  -64(up), %xmm0
        palignr($8, %xmm0, %xmm3)
        movdqa  %xmm3, -56(rp)
        movdqa  -80(up), %xmm1
        palignr($8, %xmm1, %xmm0)
        movdqa  %xmm0, -72(rp)
        movdqa  -96(up), %xmm2
        palignr($8, %xmm2, %xmm1)
        movdqa  %xmm1, -88(rp)
        movdqa  -112(up), %xmm3
        palignr($8, %xmm3, %xmm2)
```

```
        movdqa  %xmm2, -104(rp)
        movdqa  -128(up), %xmm0
        palignr($8, %xmm0, %xmm3)
        movdqa  %xmm3, -120(rp)
        lea     -128(up), up
        lea     -128(rp), rp
        jnc     L(utop)

L(uend):test    $8, R8(n)
        jz      1f
        movdqa  -16(up), %xmm1
        palignr($8, %xmm1, %xmm0)
        movdqa  %xmm0, -8(rp)
        movdqa  -32(up), %xmm0
        palignr($8, %xmm0, %xmm1)
        movdqa  %xmm1, -24(rp)
        movdqa  -48(up), %xmm1
        palignr($8, %xmm1, %xmm0)
        movdqa  %xmm0, -40(rp)
        movdqa  -64(up), %xmm0
        palignr($8, %xmm0, %xmm1)
        movdqa  %xmm1, -56(rp)
        lea     -64(up), up
        lea     -64(rp), rp

1:      test    $4, R8(n)
        jz      1f
        movdqa  -16(up), %xmm1
        palignr($8, %xmm1, %xmm0)
        movdqa  %xmm0, -8(rp)
        movdqa  -32(up), %xmm0
        palignr($8, %xmm0, %xmm1)
        movdqa  %xmm1, -24(rp)
        lea     -32(up), up
        lea     -32(rp), rp

1:      test    $2, R8(n)
        jz      1f
        movdqa  -16(up), %xmm1
        palignr($8, %xmm1, %xmm0)
        movdqa  %xmm0, -8(rp)
        lea     -16(up), up
        lea     -16(rp), rp

1:      test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)

1:      FUNC_EXIT()
        ret

C Basecase code.  Needed for good small operands speed, not for
C correctness as the above code is currently written.

L(bc):  sub     $4, R32(n)
        jc      L(end)

        ALIGN(16)
```

```
L(top): mov     (up), %r8
        mov     -8(up), %r9
        lea     -32(rp), rp
        mov     -16(up), %r10
        mov     -24(up), %r11
        lea     -32(up), up
        mov     %r8, 32(rp)
        mov     %r9, 24(rp)
ifelse(eval(COPYD_SSE_THRESHOLD >= 8),1,
`       sub     $4, R32(n)')
        mov     %r10, 16(rp)
        mov     %r11, 8(rp)
ifelse(eval(COPYD_SSE_THRESHOLD >= 8),1,
`       jnc     L(top)')

L(end): test    $1, R8(n)
        jz      1f
        mov     (up), %r8
        mov     %r8, (rp)
        lea     -8(rp), rp
        lea     -8(up), up
1:      test    $2, R8(n)
        jz      1f
        mov     (up), %r8
        mov     -8(up), %r9
        mov     %r8, (rp)
        mov     %r9, -8(rp)
1:      FUNC_EXIT()
        ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86_64/nano/copyd.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyd optimised for Intel Sandy Bridge.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
```

```
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyd)
include_mpn(`x86_64/fastsse/copyd-palignr.asm')
------------------------------------------------------------------
gmp/mpn/x86_64/nano/copyi.asm
------------------------------------------------------------------
dnl  X86-64 mpn_copyi optimised for Intel Sandy Bridge.

dnl  Copyright 2012 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

ABI_SUPPORT(DOS64)
ABI_SUPPORT(STD64)

MULFUNC_PROLOGUE(mpn_copyi)
include_mpn(`x86_64/fastsse/copyi-palignr.asm')
------------------------------------------------------------------
gmp/mpn/powerpc32/vmx/copyd.asm
------------------------------------------------------------------
dnl  PowerPC-32/VMX and PowerPC-64/VMX mpn_copyd.

dnl  Copyright 2006 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
```

```
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                16-byte coaligned      unaligned
C                   cycles/limb        cycles/limb
C 7400,7410 (G4):       0.5                0.64
C 744x,745x (G4+):      0.75               0.82
C 970 (G5):             0.78               1.02         (64-bit limbs)

C STATUS
C  * Works for all sizes and alignments.

C TODO
C  * Optimize unaligned case.  Some basic tests with 2-way and 4-way unrolling
C    indicate that we can reach 0.56 c/l for 7400, 0.75 c/l for 745x, and 0.80
C    c/l for 970.
C  * Consider using VMX instructions also for head and tail, by using some
C    read-modify-write tricks.
C  * The VMX code is used from the smallest sizes it handles, but measurements
C    show a large speed bump at the cutoff points.  Small copying (perhaps
C    using some read-modify-write technique) should be optimized.
C  * Make an mpn_com based on this code.

define(`GMP_LIMB_BYTES', eval(GMP_LIMB_BITS/8))
define(`LIMBS_PER_VR',  eval(16/GMP_LIMB_BYTES))
define(`LIMBS_PER_2VR', eval(32/GMP_LIMB_BYTES))


ifelse(GMP_LIMB_BITS,32,`
        define(`LIMB32',`       $1')
        define(`LIMB64',`')
',`
        define(`LIMB32',`')
        define(`LIMB64',`       $1')
')
```

```
C INPUT PARAMETERS
define(`rp',    `r3')
define(`up',    `r4')
define(`n',     `r5')

define(`us',    `v4')


ASM_START()
PROLOGUE(mpn_copyd)

LIMB32(`slwi.   r0, n, 2        ')
LIMB64(`sldi.   r0, n, 3        ')
        add     rp, rp, r0
        add     up, up, r0

LIMB32(`cmpi    cr7, n, 11      ')
LIMB64(`cmpdi   cr7, n, 5       ')
        bge     cr7, L(big)

        beqlr   cr0

C Handle small cases with plain operations
        mtctr   n
L(topS):
LIMB32(`lwz     r0, -4(up)      ')
LIMB64(`ld      r0, -8(up)      ')
        addi    up, up, -GMP_LIMB_BYTES
LIMB32(`stw     r0, -4(rp)      ')
LIMB64(`std     r0, -8(rp)      ')
        addi    rp, rp, -GMP_LIMB_BYTES
        bdnz    L(topS)
        blr

C Handle large cases with VMX operations
L(big):
        addi    rp, rp, -16
        addi    up, up, -16
        mfspr   r12, 256
        oris    r0, r12, 0xf800         C Set VRSAVE bit 0-4
        mtspr   256, r0

LIMB32(`rlwinm. r7, rp, 30,30,31')      C (rp >> 2) mod 4
LIMB64(`rlwinm. r7, rp, 29,31,31')      C (rp >> 3) mod 2
        beq     L(rp_aligned)

        subf    n, r7, n
L(top0):
LIMB32(`lwz     r0, 12(up)      ')
LIMB64(`ld      r0, 8(up)       ')
        addi    up, up, -GMP_LIMB_BYTES
LIMB32(`addic.  r7, r7, -1      ')
LIMB32(`stw     r0, 12(rp)      ')
LIMB64(`std     r0, 8(rp)       ')
        addi    rp, rp, -GMP_LIMB_BYTES
LIMB32(`bne     L(top0)         ')

L(rp_aligned):
```

```
LIMB32(`rlwinm. r0, up, 30,30,31')      C (up >> 2) mod 4
LIMB64(`rlwinm. r0, up, 29,31,31')      C (up >> 3) mod 2

LIMB64(`srdi    r7, n, 2        ')      C loop count corresponding to n
LIMB32(`srwi    r7, n, 3        ')      C loop count corresponding to n
        mtctr   r7                      C copy n to count register

        li      r10, -16

        beq     L(up_aligned)

        lvsl    us, 0, up

        addi    up, up, 16
LIMB32(`andi.   r0, n, 0x4      ')
LIMB64(`andi.   r0, n, 0x2      ')
        beq     L(1)
        lvx     v0, 0, up
        lvx     v2, r10, up
        vperm   v3, v2, v0, us
        stvx    v3, 0, rp
        addi    up, up, -32
        addi    rp, rp, -16
        b       L(lpu)
L(1):   lvx     v2, 0, up
        addi    up, up, -16
        b       L(lpu)

        ALIGN(32)
L(lpu): lvx     v0, 0, up
        vperm   v3, v0, v2, us
        stvx    v3, 0, rp
        lvx     v2, r10, up
        addi    up, up, -32
        vperm   v3, v2, v0, us
        stvx    v3, r10, rp
        addi    rp, rp, -32
        bdnz    L(lpu)

        b       L(tail)

L(up_aligned):

LIMB32(`andi.   r0, n, 0x4      ')
LIMB64(`andi.   r0, n, 0x2      ')
        beq     L(lpa)
        lvx     v0, 0,   up
        stvx    v0, 0,   rp
        addi    up, up, -16
        addi    rp, rp, -16
        b       L(lpa)

        ALIGN(32)
L(lpa): lvx     v0, 0,   up
        lvx     v1, r10, up
        addi    up, up, -32
        nop
        stvx    v0, 0,   rp
```

```
        stvx    v1, r10, rp
        addi    rp, rp, -32
        bdnz    L(lpa)

L(tail):
LIMB32(`rlwinm. r7, n, 0,30,31  ')      C r7 = n mod 4
LIMB64(`rlwinm. r7, n, 0,31,31  ')      C r7 = n mod 2
        beq     L(ret)
LIMB32(`li      r10, 12         ')
L(top2):
LIMB32(`lwzx    r0, r10, up     ')
LIMB64(`ld      r0, 8(up)       ')
LIMB32(`addic.  r7, r7, -1      ')
LIMB32(`stwx    r0, r10, rp     ')
LIMB64(`std     r0, 8(rp)       ')
LIMB32(`addi    r10, r10, -GMP_LIMB_BYTES')
LIMB32(`bne     L(top2)         ')

L(ret): mtspr   256, r12
        blr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/powerpc32/vmx/copyi.asm
------------------------------------------------------------------
dnl  PowerPC-32/VMX and PowerPC-64/VMX mpn_copyi.

dnl  Copyright 2006 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                16-byte coaligned      unaligned
C                   cycles/limb        cycles/limb
C 7400,7410 (G4):       0.5                0.64
```

```
C 744x,745x (G4+):      0.75               0.82
C 970 (G5):             0.78               1.02        (64-bit limbs)

C STATUS
C  * Works for all sizes and alignments.

C TODO
C  * Optimize unaligned case.  Some basic tests with 2-way and 4-way unrolling
C    indicate that we can reach 0.56 c/l for 7400, 0.75 c/l for 745x, and 0.80
C    c/l for 970.
C  * Consider using VMX instructions also for head and tail, by using some
C    read-modify-write tricks.
C  * The VMX code is used from the smallest sizes it handles, but measurements
C    show a large speed bump at the cutoff points.  Small copying (perhaps
C    using some read-modify-write technique) should be optimized.
C  * Make an mpn_com based on this code.

define(`GMP_LIMB_BYTES', eval(GMP_LIMB_BITS/8))
define(`LIMBS_PER_VR',  eval(16/GMP_LIMB_BYTES))
define(`LIMBS_PER_2VR', eval(32/GMP_LIMB_BYTES))


ifelse(GMP_LIMB_BITS,32,`
        define(`LIMB32',`       $1')
        define(`LIMB64',`')
',`
        define(`LIMB32',`')
        define(`LIMB64',`       $1')
')

C INPUT PARAMETERS
define(`rp',    `r3')
define(`up',    `r4')
define(`n',     `r5')

define(`us',    `v4')


ASM_START()
PROLOGUE(mpn_copyi)

LIMB32(`cmpi    cr7, n, 11      ')
LIMB64(`cmpdi   cr7, n, 5       ')
        bge     cr7, L(big)

        or.     r0, n, n
        beqlr   cr0

C Handle small cases with plain operations
        mtctr   n
L(topS):
LIMB32(`lwz     r0, 0(up)       ')
LIMB64(`ld      r0, 0(up)       ')
        addi    up, up, GMP_LIMB_BYTES
LIMB32(`stw     r0, 0(rp)       ')
LIMB64(`std     r0, 0(rp)       ')
        addi    rp, rp, GMP_LIMB_BYTES
        bdnz    L(topS)
        blr
```

```
C Handle large cases with VMX operations
L(big):
        mfspr   r12, 256
        oris    r0, r12, 0xf800         C Set VRSAVE bit 0-4
        mtspr   256, r0

LIMB32(`rlwinm. r7, rp, 30,30,31')      C (rp >> 2) mod 4
LIMB64(`rlwinm. r7, rp, 29,31,31')      C (rp >> 3) mod 2
        beq     L(rp_aligned)

        subfic  r7, r7, LIMBS_PER_VR
        subf    n, r7, n
L(top0):
LIMB32(`lwz     r0, 0(up)       ')
LIMB64(`ld      r0, 0(up)       ')
        addi    up, up, GMP_LIMB_BYTES
LIMB32(`addic.  r7, r7, -1      ')
LIMB32(`stw     r0, 0(rp)       ')
LIMB64(`std     r0, 0(rp)       ')
        addi    rp, rp, GMP_LIMB_BYTES
LIMB32(`bne     L(top0)         ')

L(rp_aligned):

LIMB32(`rlwinm. r0, up, 30,30,31')      C (up >> 2) mod 4
LIMB64(`rlwinm. r0, up, 29,31,31')      C (up >> 3) mod 2

LIMB64(`srdi    r7, n, 2        ')      C loop count corresponding to n
LIMB32(`srwi    r7, n, 3        ')      C loop count corresponding to n
        mtctr   r7                      C copy n to count register

        li      r10, 16

        beq     L(up_aligned)

        lvsl    us, 0, up

LIMB32(`andi.   r0, n, 0x4      ')
LIMB64(`andi.   r0, n, 0x2      ')
        beq     L(1)
        lvx     v0, 0, up
        lvx     v2, r10, up
        vperm   v3, v0, v2, us
        stvx    v3, 0, rp
        addi    up, up, 32
        addi    rp, rp, 16
        b       L(lpu)
L(1):   lvx     v2, 0, up
        addi    up, up, 16
        b       L(lpu)

        ALIGN(32)
L(lpu): lvx     v0, 0, up
        vperm   v3, v2, v0, us
        stvx    v3, 0, rp
        lvx     v2, r10, up
        addi    up, up, 32
        vperm   v3, v0, v2, us
```

```
        stvx    v3, r10, rp
        addi    rp, rp, 32
        bdnz    L(lpu)

        addi    up, up, -16
        b       L(tail)

L(up_aligned):

LIMB32(`andi.   r0, n, 0x4      ')
LIMB64(`andi.   r0, n, 0x2      ')
        beq     L(lpa)
        lvx     v0, 0,   up
        stvx    v0, 0,   rp
        addi    up, up, 16
        addi    rp, rp, 16
        b       L(lpa)

        ALIGN(32)
L(lpa): lvx     v0, 0,   up
        lvx     v1, r10, up
        addi    up, up, 32
        nop
        stvx    v0, 0,   rp
        stvx    v1, r10, rp
        addi    rp, rp, 32
        bdnz    L(lpa)

L(tail):
LIMB32(`rlwinm. r7, n, 0,30,31  ')      C r7 = n mod 4
LIMB64(`rlwinm. r7, n, 0,31,31  ')      C r7 = n mod 2
        beq     L(ret)
LIMB32(`li      r10, 0          ')
L(top2):
LIMB32(`lwzx    r0, r10, up     ')
LIMB64(`ld      r0, 0(up)       ')
LIMB32(`addic.  r7, r7, -1      ')
LIMB32(`stwx    r0, r10, rp     ')
LIMB64(`std     r0, 0(rp)       ')
LIMB32(`addi    r10, r10, GMP_LIMB_BYTES')
LIMB32(`bne     L(top2)         ')

L(ret): mtspr   256, r12
        blr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/generic/copyi.c
------------------------------------------------------------------
/* mpn_copyi

Copyright 2009 Free Software Foundation, Inc.

This file is part of the GNU MP Library.

The GNU MP Library is free software; you can redistribute it and/or modify
it under the terms of either:

  * the GNU Lesser General Public License as published by the Free
    Software Foundation; either version 3 of the License, or (at your
```

```
    option) any later version.

or

  * the GNU General Public License as published by the Free Software
    Foundation; either version 2 of the License, or (at your option) any
    later version.

or both in parallel, as here.

The GNU MP Library is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
for more details.

You should have received copies of the GNU General Public License and the
GNU Lesser General Public License along with the GNU MP Library.  If not,
see https://www.gnu.org/licenses/.  */

#include "gmp.h"
#include "gmp-impl.h"

void
mpn_copyi (mp_ptr rp, mp_srcptr up, mp_size_t n)
{
  mp_size_t i;

  up += n;
  rp += n;
  for (i = -n; i != 0; i++)
    rp[i] = up[i];
}
----------------------------------------------------------------------
gmp/mpn/generic/copyd.c
----------------------------------------------------------------------
/* mpn_copyd

Copyright 2009 Free Software Foundation, Inc.

This file is part of the GNU MP Library.

The GNU MP Library is free software; you can redistribute it and/or modify
it under the terms of either:

  * the GNU Lesser General Public License as published by the Free
    Software Foundation; either version 3 of the License, or (at your
    option) any later version.

or

  * the GNU General Public License as published by the Free Software
    Foundation; either version 2 of the License, or (at your option) any
    later version.

or both in parallel, as here.

The GNU MP Library is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
```

```
for more details.

You should have received copies of the GNU General Public License and the
GNU Lesser General Public License along with the GNU MP Library.  If not,
see https://www.gnu.org/licenses/.  */

#include "gmp.h"
#include "gmp-impl.h"

void
mpn_copyd (mp_ptr rp, mp_srcptr up, mp_size_t n)
{
  mp_size_t i;

  for (i = n - 1; i >= 0; i--)
    rp[i] = up[i];
}
----------------------------------------------------------------
gmp/mpn/x86/k6/k62mmx/copyd.asm
----------------------------------------------------------------
dnl  AMD K6-2 mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 2001, 2002 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C K6-2: 1.0 cycles/limb


C void mpn_copyd (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C The loop here is no faster than a rep movsl at 1.0 c/l, but it avoids a 30
```

```
C cycle startup time, which amounts for instance to a 2x speedup at 15
C limbs.
C
C If dst is 4mod8 the loop would be 1.17 c/l, but that's avoided by
C processing one limb separately to make it aligned.  This and a final odd
C limb are handled in a branch-free fashion, ending up re-copying if the
C special case isn't needed.
C
C Alternatives:
C
C There used to be a big unrolled version of this, running at 0.56 c/l if
C the destination was aligned, but that seemed rather excessive for the
C relative importance of copyd.
C
C If the destination alignment is ignored and just left to run at 1.17 c/l
C some code size and a fixed few cycles can be saved.  Considering how few
C uses copyd finds perhaps that should be favoured.  The current code has
C the attraction of being no slower than a basic rep movsl though.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)

dnl  re-using parameter space
define(SAVE_EBX,`PARAM_SIZE')

        TEXT
        ALIGN(16)

PROLOGUE(mpn_copyd)
deflit(`FRAME',0)

        movl    PARAM_SIZE, %ecx
        movl    %ebx, SAVE_EBX

        movl    PARAM_SRC, %eax
        movl    PARAM_DST, %edx

        subl    $1, %ecx                C better code alignment than decl
        jb      L(zero)

        jz      L(one_more)
        leal    4(%edx,%ecx,4), %ebx

Zdisp(  movd,   0,(%eax,%ecx,4), %mm0)  C high limb
Zdisp(  movd,   %mm0, 0,(%edx,%ecx,4))  C Zdisp for good code alignment

        cmpl    $1, %ecx
        je      L(one_more)

        shrl    $2, %ebx
        andl    $1, %ebx                C 1 if dst[size-2] unaligned

        subl    %ebx, %ecx
        nop                             C code alignment

L(top):
        C eax   src
        C ebx
```

```
        C ecx   counter
        C edx   dst

        movq    -4(%eax,%ecx,4), %mm0
        subl    $2, %ecx

        movq    %mm0, 4(%edx,%ecx,4)
        ja      L(top)


L(one_more):
        movd    (%eax), %mm0
        movd    %mm0, (%edx)

        movl    SAVE_EBX, %ebx
        emms_or_femms
L(zero):
        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/pentium/copyd.asm
------------------------------------------------------------------
dnl  Intel Pentium mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 1996, 2001, 2002, 2006 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C P5: 1.25 cycles/limb
```

```
C void mpn_copyd (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C See comments in copyi.asm.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)

        TEXT
        ALIGN(8)
PROLOGUE(mpn_copyd)
deflit(`FRAME',0)

        movl    PARAM_SRC, %eax
        movl    PARAM_SIZE, %ecx

        pushl   %esi    FRAME_pushl()
        pushl   %edi    FRAME_pushl()

        leal    -4(%eax,%ecx,4), %eax           C &src[size-1]
        movl    PARAM_DST, %edx

        subl    $7, %ecx                        C size-7
        jle     L(end)

        movl    28-4(%edx,%ecx,4), %esi         C prefetch cache, dst[size-1]
        nop

L(top):
        C eax   src, decrementing
        C ebx
        C ecx   counter, limbs
        C edx   dst
        C esi   scratch
        C edi   scratch
        C ebp

        movl    28-32(%edx,%ecx,4), %esi        C prefetch dst cache line
        subl    $8, %ecx

        movl    (%eax), %esi                    C read words pairwise
        movl    -4(%eax), %edi
        movl    %esi, 56(%edx,%ecx,4)           C store words pairwise
        movl    %edi, 52(%edx,%ecx,4)

        movl    -8(%eax), %esi
        movl    -12(%eax), %edi
        movl    %esi, 48(%edx,%ecx,4)
        movl    %edi, 44(%edx,%ecx,4)

        movl    -16(%eax), %esi
        movl    -20(%eax), %edi
        movl    %esi, 40(%edx,%ecx,4)
        movl    %edi, 36(%edx,%ecx,4)

        movl    -24(%eax), %esi
        movl    -28(%eax), %edi
        movl    %esi, 32(%edx,%ecx,4)
        movl    %edi, 28(%edx,%ecx,4)
```

```
        leal    -32(%eax), %eax
        jg      L(top)


L(end):
        C ecx   -7 to 0, representing respectively 0 to 7 limbs remaining
        C eax   src end
        C edx   dst, next location to store

        addl    $4, %ecx
        jle     L(no4)

        movl    (%eax), %esi
        movl    -4(%eax), %edi
        movl    %esi, 8(%edx,%ecx,4)
        movl    %edi, 4(%edx,%ecx,4)

        movl    -8(%eax), %esi
        movl    -12(%eax), %edi
        movl    %esi, (%edx,%ecx,4)
        movl    %edi, -4(%edx,%ecx,4)

        subl    $16, %eax
        subl    $4, %ecx
L(no4):

        addl    $2, %ecx
        jle     L(no2)

        movl    (%eax), %esi
        movl    -4(%eax), %edi
        movl    %esi, (%edx,%ecx,4)
        movl    %edi, -4(%edx,%ecx,4)

        subl    $8, %eax
        subl    $2, %ecx
L(no2):

        jnz     L(done)

        movl    (%eax), %ecx
        movl    %ecx, (%edx)    C risk of cache bank clash here

L(done):
        popl    %edi
        popl    %esi

        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/pentium/copyi.asm
------------------------------------------------------------------
dnl  Intel Pentium mpn_copyi -- copy limb vector, incrementing.

dnl  Copyright 1996, 2001, 2002, 2006 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
```

```
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C P5: 1.25 cycles/limb


C void mpn_copyi (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C Destination prefetching is done to avoid repeated write-throughs on lines
C not already in L1.
C
C At least one of the src or dst pointer needs to be incremented rather than
C using indexing, so that there's somewhere to put the loop control without
C an AGI.  Incrementing one and not two lets us keep loop overhead to 2
C cycles.  Making it the src pointer incremented avoids an AGI on the %ecx
C subtracts in the finishup code.
C
C The block of finishup code is almost as big as the main loop itself, which
C is unfortunate, but it's faster that way than with say rep movsl, by about
C 10 cycles for instance on P55.
C
C There's nothing to be gained from MMX on P55, since it can do only one
C movq load (or store) per cycle, so the throughput would be the same as the
C code here (and even then only if src and dst have the same alignment mod
C 8).

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)

        TEXT
        ALIGN(8)
PROLOGUE(mpn_copyi)
deflit(`FRAME',0)
```

```
        movl    PARAM_SIZE, %ecx
        movl    PARAM_DST, %edx

        pushl   %ebx    FRAME_pushl()
        pushl   %esi    FRAME_pushl()

        leal    (%edx,%ecx,4), %edx     C &dst[size-1]
        xorl    $-1, %ecx               C -size-1

        movl    PARAM_SRC, %esi
        addl    $8, %ecx                C -size+7

        jns     L(end)

        movl    -28(%edx,%ecx,4), %eax  C fetch destination cache line, dst[0]
        nop

L(top):
        C eax   scratch
        C ebx   scratch
        C ecx   counter, limbs, negative
        C edx   &dst[size-1]
        C esi   src, incrementing
        C edi
        C ebp

        movl    (%edx,%ecx,4), %eax     C fetch destination cache line
        addl    $8, %ecx

        movl    (%esi), %eax            C read words pairwise
        movl    4(%esi), %ebx
        movl    %eax, -60(%edx,%ecx,4)  C store words pairwise
        movl    %ebx, -56(%edx,%ecx,4)

        movl    8(%esi), %eax
        movl    12(%esi), %ebx
        movl    %eax, -52(%edx,%ecx,4)
        movl    %ebx, -48(%edx,%ecx,4)

        movl    16(%esi), %eax
        movl    20(%esi), %ebx
        movl    %eax, -44(%edx,%ecx,4)
        movl    %ebx, -40(%edx,%ecx,4)

        movl    24(%esi), %eax
        movl    28(%esi), %ebx
        movl    %eax, -36(%edx,%ecx,4)
        movl    %ebx, -32(%edx,%ecx,4)

        leal    32(%esi), %esi
        js      L(top)


L(end):
        C ecx   0 to 7, representing respectively 7 to 0 limbs remaining
        C esi   src end
        C edx   dst, next location to store
```

```
        subl    $4, %ecx
        jns     L(no4)

        movl    (%esi), %eax
        movl    4(%esi), %ebx
        movl    %eax, -12(%edx,%ecx,4)
        movl    %ebx, -8(%edx,%ecx,4)

        movl    8(%esi), %eax
        movl    12(%esi), %ebx
        movl    %eax, -4(%edx,%ecx,4)
        movl    %ebx, (%edx,%ecx,4)

        addl    $16, %esi
        addl    $4, %ecx
L(no4):

        subl    $2, %ecx
        jns     L(no2)

        movl    (%esi), %eax
        movl    4(%esi), %ebx
        movl    %eax, -4(%edx,%ecx,4)
        movl    %ebx, (%edx,%ecx,4)

        addl    $8, %esi
        addl    $2, %ecx
L(no2):

        jnz     L(done)

        movl    (%esi), %eax
        movl    %eax, -4(%edx,%ecx,4)   C risk of cache bank clash here

L(done):
        popl    %esi
        popl    %ebx

        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/pentium4/copyd.asm
------------------------------------------------------------------
dnl  Pentium-4 mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 1999-2001 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
```

```
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.


dnl  The std/rep/movsl/cld is very slow for small blocks on pentium4.  Its
dnl  startup time seems to be about 165 cycles.  It then needs 2.6 c/l.
dnl  We therefore use an open-coded 2 c/l copying loop.

dnl  Ultimately, we may want to use 64-bit movq or 128-bit movdqu in some
dnl  nifty unrolled arrangement.  Clearly, that could reach much higher
dnl  speeds, at least for large blocks.

include(`../config.m4')


defframe(PARAM_SIZE, 12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST,  4)

        TEXT
        ALIGN(8)

PROLOGUE(mpn_copyd)
deflit(`FRAME',0)

        movl    PARAM_SIZE, %ecx

        movl    PARAM_SRC, %eax
        movl    PARAM_DST, %edx
        movl    %ebx, PARAM_SIZE
        addl    $-1, %ecx
        js      L(end)

L(loop):
        movl    (%eax,%ecx,4), %ebx
        movl    %ebx, (%edx,%ecx,4)
        addl    $-1, %ecx

        jns     L(loop)
L(end):
        movl    PARAM_SIZE, %ebx
        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/pentium4/copyi.asm
------------------------------------------------------------------
```

```
dnl  Pentium-4 mpn_copyi -- copy limb vector, incrementing.

dnl  Copyright 1999-2001 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.


dnl  The rep/movsl is very slow for small blocks on pentium4.  Its startup
dnl  time seems to be about 110 cycles.  It then copies at a rate of one
dnl  limb per cycle.  We therefore fall back to an open-coded 2 c/l copying
dnl  loop for smaller sizes.

dnl  Ultimately, we may want to use 64-bit movd or 128-bit movdqu in some
dnl  nifty unrolled arrangement.  Clearly, that could reach much higher
dnl  speeds, at least for large blocks.

include(`../config.m4')


defframe(PARAM_SIZE, 12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST,  4)

        TEXT
        ALIGN(8)

PROLOGUE(mpn_copyi)
deflit(`FRAME',0)

        movl    PARAM_SIZE, %ecx
        cmpl    $150, %ecx
        jg      L(replmovs)

        movl    PARAM_SRC, %eax
        movl    PARAM_DST, %edx
```

```
        movl    %ebx, PARAM_SIZE
        testl   %ecx, %ecx
        jz      L(end)

L(loop):
        movl    (%eax), %ebx
        leal    4(%eax), %eax
        addl    $-1, %ecx
        movl    %ebx, (%edx)
        leal    4(%edx), %edx

        jnz     L(loop)

L(end):
        movl    PARAM_SIZE, %ebx
        ret

L(replmovs):
        cld     C better safe than sorry, see mpn/x86/README

        movl    %esi, %eax
        movl    PARAM_SRC, %esi
        movl    %edi, %edx
        movl    PARAM_DST, %edi

        rep
        movsl

        movl    %eax, %esi
        movl    %edx, %edi

        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/copyd.asm
------------------------------------------------------------------
dnl  x86 mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 1999-2002 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
```

```
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C     cycles/limb  startup (approx)
C P5      1.0         40
C P6      2.4         70
C K6      1.0         55
C K7      1.3         75
C P4      2.6        175
C
C (Startup time includes some function call overheads.)


C void mpn_copyd (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C Copy src,size to dst,size, working from high to low addresses.
C
C The code here is very generic and can be expected to be reasonable on all
C the x86 family.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)
deflit(`FRAME',0)

        TEXT
        ALIGN(32)

PROLOGUE(mpn_copyd)
        C eax   saved esi
        C ebx
        C ecx   counter
        C edx   saved edi
        C esi   src
        C edi   dst
        C ebp

        movl    PARAM_SIZE, %ecx
        movl    %esi, %eax

        movl    PARAM_SRC, %esi
        movl    %edi, %edx

        movl    PARAM_DST, %edi
        leal    -4(%esi,%ecx,4), %esi

        leal    -4(%edi,%ecx,4), %edi

        std

        rep
```

```
        movsl

        cld

        movl    %eax, %esi
        movl    %edx, %edi

        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/atom/mmx/copyd.asm
------------------------------------------------------------------
dnl  Intel Atom mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 2011 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

MULFUNC_PROLOGUE(mpn_copyd)
include_mpn(`x86/k7/mmx/copyd.asm')
------------------------------------------------------------------
gmp/mpn/x86/atom/mmx/copyi.asm
------------------------------------------------------------------
dnl  Intel Atom mpn_copyi -- copy limb vector, incrementing.

dnl  Copyright 2011 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
```

```
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

MULFUNC_PROLOGUE(mpn_copyi)
include_mpn(`x86/k7/mmx/copyi.asm')
------------------------------------------------------------------
gmp/mpn/x86/copyi.asm
------------------------------------------------------------------
dnl  x86 mpn_copyi -- copy limb vector, incrementing.

dnl  Copyright 1999-2002 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')
```

```
C     cycles/limb  startup (approx)
C P5      1.0         35
C P6      0.75        45
C K6      1.0         30
C K7      1.3         65
C P4      1.0        120
C
C (Startup time includes some function call overheads.)


C void mpn_copyi (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C Copy src,size to dst,size, working from low to high addresses.
C
C The code here is very generic and can be expected to be reasonable on all
C the x86 family.
C
C P6 -  An MMX based copy was tried, but was found to be slower than a rep
C       movs in all cases.  The fastest MMX found was 0.8 cycles/limb (when
C       fully aligned).  A rep movs seems to have a startup time of about 15
C       cycles, but doing something special for small sizes could lead to a
C       branch misprediction that would destroy any saving.  For now a plain
C       rep movs seems ok.
C
C K62 - We used to have a big chunk of code doing an MMX copy at 0.56 c/l if
C       aligned or a 1.0 rep movs if not.  But that seemed excessive since
C       it only got an advantage half the time, and even then only showed it
C       above 50 limbs or so.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)
deflit(`FRAME',0)

        TEXT
        ALIGN(32)

        C eax   saved esi
        C ebx
        C ecx   counter
        C edx   saved edi
        C esi   src
        C edi   dst
        C ebp

PROLOGUE(mpn_copyi)

        movl    PARAM_SIZE, %ecx
        movl    %esi, %eax

        movl    PARAM_SRC, %esi
        movl    %edi, %edx

        movl    PARAM_DST, %edi

        cld     C better safe than sorry, see mpn/x86/README
```

```
        rep
        movsl

        movl    %eax, %esi
        movl    %edx, %edi

        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/k7/mmx/copyd.asm
------------------------------------------------------------------
dnl  AMD K7 mpn_copyd -- copy limb vector, decrementing.

dnl  Copyright 1999, 2000, 2002 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C    alignment dst/src, A=0mod8 N=4mod8
C       A/A   A/N   N/A   N/N
C K7    0.75  1.0   1.0   0.75


C void mpn_copyd (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C The various comments in mpn/x86/k7/copyi.asm apply here too.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)
deflit(`FRAME',0)
```

```
dnl  parameter space reused
define(SAVE_EBX,`PARAM_SIZE')
define(SAVE_ESI,`PARAM_SRC')

dnl  minimum 5 since the unrolled code can't handle less than 5
deflit(UNROLL_THRESHOLD, 5)

        TEXT
        ALIGN(32)
PROLOGUE(mpn_copyd)

        movl    PARAM_SIZE, %ecx
        movl    %ebx, SAVE_EBX

        movl    PARAM_SRC, %eax
        movl    PARAM_DST, %edx

        cmpl    $UNROLL_THRESHOLD, %ecx
        jae     L(unroll)

        orl     %ecx, %ecx
        jz      L(simple_done)

L(simple):
        C eax   src
        C ebx   scratch
        C ecx   counter
        C edx   dst
        C
        C this loop is 2 cycles/limb

        movl    -4(%eax,%ecx,4), %ebx
        movl    %ebx, -4(%edx,%ecx,4)
        decl    %ecx
        jnz     L(simple)

L(simple_done):
        movl    SAVE_EBX, %ebx
        ret


L(unroll):
        movl    %esi, SAVE_ESI
        leal    (%eax,%ecx,4), %ebx
        leal    (%edx,%ecx,4), %esi

        andl    %esi, %ebx
        movl    SAVE_ESI, %esi
        subl    $4, %ecx                C size-4

        testl   $4, %ebx   C testl to pad code closer to 16 bytes for L(top)
        jz      L(aligned)

        C both src and dst unaligned, process one limb to align them
        movl    12(%eax,%ecx,4), %ebx
        movl    %ebx, 12(%edx,%ecx,4)
        decl    %ecx
L(aligned):
```

```
        ALIGN(16)
L(top):
        C eax   src
        C ebx
        C ecx   counter, limbs
        C edx   dst

        movq    8(%eax,%ecx,4), %mm0
        movq    (%eax,%ecx,4), %mm1
        subl    $4, %ecx
        movq    %mm0, 16+8(%edx,%ecx,4)
        movq    %mm1, 16(%edx,%ecx,4)
        jns     L(top)


        C now %ecx is -4 to -1 representing respectively 0 to 3 limbs remaining

        testb   $2, %cl
        jz      L(finish_not_two)

        movq    8(%eax,%ecx,4), %mm0
        movq    %mm0, 8(%edx,%ecx,4)
L(finish_not_two):

        testb   $1, %cl
        jz      L(done)

        movl    (%eax), %ebx
        movl    %ebx, (%edx)

L(done):
        movl    SAVE_EBX, %ebx
        emms
        ret


EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/k7/mmx/copyi.asm
------------------------------------------------------------------
dnl  AMD K7 mpn_copyi -- copy limb vector, incrementing.

dnl  Copyright 1999, 2000, 2002, 2003 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
```

```
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C    alignment dst/src, A=0mod8 N=4mod8
C       A/A   A/N   N/A   N/N
C K7    0.75  1.0   1.0   0.75


C void mpn_copyi (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C Copy src,size to dst,size.
C
C This code at 0.75 or 1.0 c/l is always faster than a plain rep movsl at
C 1.33 c/l.
C
C The K7 can do a 64-bit load and 64-bit store in one cycle (optimization
C guile 22007 appendix B), so 0.5 c/l should be possible, however nothing
C under 0.7 c/l is known.  Apparently only two 32-bit stores can be done in
C one cycle, so perhaps some scheduling is needed to ensure it's a
C load+store in each cycle, not store+store.
C
C If both source and destination are unaligned then one limb is processed at
C the start to make them aligned and so get 0.75 c/l, whereas if they'd been
C used unaligned it would be 1.5 c/l.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)

dnl  parameter space reused
define(SAVE_EBX,`PARAM_SIZE')

dnl  minimum 5 since the unrolled code can't handle less than 5
deflit(UNROLL_THRESHOLD, 5)

        TEXT
        ALIGN(32)
PROLOGUE(mpn_copyi)
deflit(`FRAME',0)

        movl    PARAM_SIZE, %ecx
        movl    %ebx, SAVE_EBX

        movl    PARAM_SRC, %eax
        movl    PARAM_DST, %edx

        cmpl    $UNROLL_THRESHOLD, %ecx
```

```
        jae     L(unroll)

        orl     %ecx, %ecx
        jz      L(simple_done)

L(simple):
        C eax   src, incrementing
        C ebx   scratch
        C ecx   counter
        C edx   dst, incrementing
        C
        C this loop is 2 cycles/limb

        movl    (%eax), %ebx
        movl    %ebx, (%edx)
        decl    %ecx
        leal    4(%eax), %eax
        leal    4(%edx), %edx
        jnz     L(simple)

L(simple_done):
        movl    SAVE_EBX, %ebx
        ret


L(unroll):
        movl    %eax, %ebx
        leal    -12(%eax,%ecx,4), %eax  C src end - 12
        subl    $3, %ecx                C size-3

        andl    %edx, %ebx
        leal    (%edx,%ecx,4), %edx     C dst end - 12
        negl    %ecx

        testl   $4, %ebx   C testl to pad code closer to 16 bytes for L(top)
        jz      L(aligned)

        C both src and dst unaligned, process one limb to align them
        movl    (%eax,%ecx,4), %ebx
        movl    %ebx, (%edx,%ecx,4)
        incl    %ecx
L(aligned):


        ALIGN(16)
L(top):
        C eax   src end - 12
        C ebx
        C ecx   counter, negative, limbs
        C edx   dst end - 12

        movq    (%eax,%ecx,4), %mm0
        movq    8(%eax,%ecx,4), %mm1
        addl    $4, %ecx
        movq    %mm0, -16(%edx,%ecx,4)
        movq    %mm1, -16+8(%edx,%ecx,4)
        ja      L(top)          C jump no carry and not zero
```

```
        C now %ecx is 0 to 3 representing respectively 3 to 0 limbs remaining

        testb   $2, %cl
        jnz     L(finish_not_two)

        movq    (%eax,%ecx,4), %mm0
        movq    %mm0, (%edx,%ecx,4)
L(finish_not_two):

        testb   $1, %cl
        jnz     L(done)

        movl    8(%eax), %ebx
        movl    %ebx, 8(%edx)

L(done):
        movl    SAVE_EBX, %ebx
        emms
        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/x86/p6/copyd.asm
------------------------------------------------------------------
dnl  Intel P6 mpn_copyd -- copy limb vector backwards.

dnl  Copyright 2001, 2002 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')


C P6: 1.75 cycles/limb, or 0.75 if no overlap
```

```
C void mpn_copyd (mp_ptr dst, mp_srcptr src, mp_size_t size);
C
C An explicit loop is used because a decrementing rep movsl is a bit slow at
C 2.4 c/l.  That rep movsl also has about a 40 cycle startup time, and the
C code here stands a chance of being faster if the branches predict well.
C
C The slightly strange loop form seems necessary for the claimed speed.
C Maybe load/store ordering affects it.
C
C The source and destination are checked to see if they're actually
C overlapping, since it might be possible to use an incrementing rep movsl
C at 0.75 c/l.  (It doesn't suffer the bad startup time of the decrementing
C version.)
C
C Enhancements:
C
C Top speed for an all-integer copy is probably 1.0 c/l, being one load and
C one store each cycle.  Unrolling the loop below would approach 1.0, but
C it'd be good to know why something like store/load/subl + store/load/jnz
C doesn't already run at 1.0 c/l.  It looks like it should decode in 2
C cycles, but doesn't run that way.

defframe(PARAM_SIZE,12)
defframe(PARAM_SRC, 8)
defframe(PARAM_DST, 4)

dnl  re-using parameter space
define(SAVE_ESI,`PARAM_SIZE')
define(SAVE_EDI,`PARAM_SRC')

        TEXT
        ALIGN(16)

PROLOGUE(mpn_copyd)
deflit(`FRAME',0)

        movl    PARAM_SIZE, %ecx

        movl    %esi, SAVE_ESI
        movl    PARAM_SRC, %esi

        movl    %edi, SAVE_EDI
        movl    PARAM_DST, %edi

        subl    $1, %ecx
        jb      L(zero)

        movl    (%esi,%ecx,4), %eax             C src[size-1]
        jz      L(one)

        movl    -4(%esi,%ecx,4), %edx           C src[size-2]
        subl    $2, %ecx
        jbe     L(done_loop)                    C 2 or 3 limbs only


        C The usual overlap is
        C
        C     high                    low
```

```
        C     +------------------+
        C     |               dst|
        C     +------------------+
        C           +------------------+
        C           |               src|
        C           +------------------+
        C
        C We can use an incrementing copy in the following circumstances.
        C
        C     src+4*size<=dst, since then the regions are disjoint
        C
        C     src==dst, clearly (though this shouldn't occur normally)
        C
        C     src>dst, since in that case it's a requirement of the
        C              parameters that src>=dst+size*4, and hence the
        C              regions are disjoint
        C

        leal    (%edi,%ecx,4), %edx
        cmpl    %edi, %esi
        jae     L(use_movsl)            C src >= dst

        cmpl    %edi, %edx
        movl    4(%esi,%ecx,4), %edx    C src[size-2] again
        jbe     L(use_movsl)            C src+4*size <= dst


L(top):
        C eax   prev high limb
        C ebx
        C ecx   counter, size-3 down to 0 or -1, inclusive, by 2s
        C edx   prev low limb
        C esi   src
        C edi   dst
        C ebp

        movl    %eax, 8(%edi,%ecx,4)
        movl    (%esi,%ecx,4), %eax

        movl    %edx, 4(%edi,%ecx,4)
        movl    -4(%esi,%ecx,4), %edx

        subl    $2, %ecx
        jnbe    L(top)


L(done_loop):
        movl    %eax, 8(%edi,%ecx,4)
        movl    %edx, 4(%edi,%ecx,4)

        C copy low limb (needed if size was odd, but will already have been
        C done in the loop if size was even)
        movl    (%esi), %eax
L(one):
        movl    %eax, (%edi)
        movl    SAVE_EDI, %edi
        movl    SAVE_ESI, %esi

        ret
```

```
L(use_movsl):
        C eax
        C ebx
        C ecx   size-3
        C edx
        C esi   src
        C edi   dst
        C ebp

        addl    $3, %ecx

        cld             C better safe than sorry, see mpn/x86/README

        rep
        movsl

L(zero):
        movl    SAVE_ESI, %esi
        movl    SAVE_EDI, %edi

        ret

EPILOGUE()
------------------------------------------------------------------
gmp/mpn/s390_64/copyd.asm
------------------------------------------------------------------
dnl  S/390-64 mpn_copyd

dnl  Copyright 2011 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.
```

```
include(`../config.m4')

C            cycles/limb
C z900           2.67
C z990           1.5
C z9             ?
C z10            1.8
C z196           ?

C FIXME:
C  * Avoid saving/restoring callee-saves registers for n < 3.  This could be
C    done by setting rp=r1, up=r2, i=r0 and r3,r4,r5 for clock regs.
C    We could then use r3...r10 in main loop.
C  * Could we use some EX trick, modifying lmg/stmg, for the feed-in code?

C INPUT PARAMETERS
define(`rp_param',      `%r2')
define(`up_param',      `%r3')
define(`n',             `%r4')

define(`rp',    `%r8')
define(`up',    `%r9')

ASM_START()
PROLOGUE(mpn_copyd)
        stmg    %r6, %r11, 48(%r15)

        sllg    %r1, n, 3
        la      %r10, 8(n)
        aghi    %r1, -64
        srlg    %r10, %r10, 3
        lghi    %r11, -64

        la      rp, 0(%r1,rp_param)     C FIXME use lay on z990 and later
        la      up, 0(%r1,up_param)     C FIXME use lay on z990 and later

        lghi    %r7, 7
        ngr     %r7, n                  C n mod 8
        cghi    %r7, 2
        jh      L(b34567)
        cghi    %r7, 1
        je      L(b1)
        jh      L(b2)

L(b0):  brctg   %r10, L(top)
        j       L(end)

L(b1):  lg      %r0, 56(up)
        aghi    up, -8
        stg     %r0, 56(rp)
        aghi    rp, -8
        brctg   %r10, L(top)
        j       L(end)

L(b2):  lmg     %r0, %r1, 48(up)
        aghi    up, -16
        stmg    %r0, %r1, 48(rp)
        aghi    rp, -16
        brctg   %r10, L(top)
```

```
        j       L(end)

L(b34567):
        cghi    %r7, 4
        jl      L(b3)
        je      L(b4)
        cghi    %r7, 6
        je      L(b6)
        jh      L(b7)

L(b5):  lmg     %r0, %r4, 24(up)
        aghi    up, -40
        stmg    %r0, %r4, 24(rp)
        aghi    rp, -40
        brctg   %r10, L(top)
        j       L(end)

L(b3):  lmg     %r0, %r2, 40(up)
        aghi    up, -24
        stmg    %r0, %r2, 40(rp)
        aghi    rp, -24
        brctg   %r10, L(top)
        j       L(end)

L(b4):  lmg     %r0, %r3, 32(up)
        aghi    up, -32
        stmg    %r0, %r3, 32(rp)
        aghi    rp, -32
        brctg   %r10, L(top)
        j       L(end)

L(b6):  lmg     %r0, %r5, 16(up)
        aghi    up, -48
        stmg    %r0, %r5, 16(rp)
        aghi    rp, -48
        brctg   %r10, L(top)
        j       L(end)

L(b7):  lmg     %r0, %r6, 8(up)
        aghi    up, -56
        stmg    %r0, %r6, 8(rp)
        aghi    rp, -56
        brctg   %r10, L(top)
        j       L(end)

L(top): lmg     %r0, %r7, 0(up)
        la      up, 0(%r11,up)
        stmg    %r0, %r7, 0(rp)
        la      rp, 0(%r11,rp)
        brctg   %r10, L(top)

L(end): lmg     %r6, %r11, 48(%r15)
        br      %r14
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/s390_64/copyi.asm
------------------------------------------------------------------
dnl  S/390-64 mpn_copyi
```

```
dnl  Copyright 2011 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.


include(`../config.m4')

C            cycles/limb
C z900           1.25
C z990           0.75
C z9             ?
C z10            1
C z196           ?

C NOTE
C  * This is based on GNU libc memcpy which was written by Martin Schwidefsky.

C INPUT PARAMETERS
define(`rp',    `%r2')
define(`up',    `%r3')
define(`n',     `%r4')

ASM_START()
PROLOGUE(mpn_copyi)
        ltgr    %r4, %r4
        sllg    %r4, %r4, 3
        je      L(rtn)
        aghi    %r4, -1
        srlg    %r5, %r4, 8
        ltgr    %r5, %r5                C < 256 bytes to copy?
        je      L(1)

L(top): mvc     0(256, rp), 0(up)
        la      rp, 256(rp)
        la      up, 256(up)
```

```
        brctg   %r5, L(top)

L(1):   bras    %r5, L(2)               C make r5 point to mvc insn
        mvc     0(1, rp), 0(up)
L(2):   ex      %r4, 0(%r5)             C execute mvc with length ((n-1) mod 256)+1
L(rtn): br      %r14
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/alpha/copyd.asm
------------------------------------------------------------------
dnl  Alpha mpn_copyd -- copy, decrementing.

dnl  Copyright 2002, 2003 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C      cycles/limb
C EV4:     4
C EV5:     1.75
C EV6:     1

C INPUT PARAMETERS
C rp    r16
C up    r17
C n     r18


ASM_START()
PROLOGUE(mpn_copyd)
        s8addq  r18,r16,r16             C E0
        s8addq  r18,r17,r17             C E1
        lda     r18,-8(r18)             C E0
        blt     r18,$Lend               C E1
```

```
$Loop:  ldq     r0,-8(r17)              C E0
        ldq     r1,-16(r17)             C E1
        ldq     r2,-24(r17)             C E0
        ldq     r3,-32(r17)             C E1
        ldq     r4,-40(r17)             C E0
        ldq     r5,-48(r17)             C E1
        ldq     r6,-56(r17)             C E0
        ldq     r7,-64(r17)             C E1
        stq     r0,-8(r16)              C E0
        lda     r17,-64(r17)            C E1
        stq     r1,-16(r16)             C E0
        bis     r31, r31, r31           C E1
        stq     r2,-24(r16)             C E0
        lda     r18,-8(r18)             C E1
        stq     r3,-32(r16)             C E0
        bis     r31, r31, r31           C E1
        stq     r4,-40(r16)             C E0
        bis     r31, r31, r31           C E1
        stq     r5,-48(r16)             C E0
        bis     r31, r31, r31           C E1
        stq     r6,-56(r16)             C E0
        bis     r31, r31, r31           C E1
        stq     r7,-64(r16)             C E0
        lda     r16,-64(r16)            C E1
        bge     r18,$Loop               C E1
$Lend:  lda     r18,7(r18)              C E0
        blt     r18,$Lret               C E1
        ldq     r0,-8(r17)              C E0
        beq     r18,$Lend0              C E1
$Loop0: stq     r0,-8(r16)              C E0
        lda     r16,-8(r16)             C E1
        ldq     r0,-16(r17)             C E0
        lda     r18,-1(r18)             C E1
        lda     r17,-8(r17)             C E0
        bgt     r18,$Loop0              C E1
$Lend0: stq     r0,-8(r16)              C E0
$Lret:  ret     r31,(r26),1             C E1
EPILOGUE(mpn_copyd)
ASM_END()
------------------------------------------------------------------
gmp/mpn/alpha/copyi.asm
------------------------------------------------------------------
dnl  Alpha mpn_copyi -- copy, incrementing.

dnl  Copyright 2002, 2003 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
```

```
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C      cycles/limb
C EV4:     4
C EV5:     1.75
C EV6:     1

C INPUT PARAMETERS
C rp    r16
C up    r17
C n     r18


ASM_START()
PROLOGUE(mpn_copyi)
        lda     r18,-8(r18)             C E0
        blt     r18,$Lend               C E1
$Loop:  ldq     r0,0(r17)               C E0
        ldq     r1,8(r17)               C E1
        ldq     r2,16(r17)              C E0
        ldq     r3,24(r17)              C E1
        ldq     r4,32(r17)              C E0
        ldq     r5,40(r17)              C E1
        ldq     r6,48(r17)              C E0
        ldq     r7,56(r17)              C E1
        stq     r0,0(r16)               C E0
        lda     r17,64(r17)             C E1
        stq     r1,8(r16)               C E0
        bis     r31, r31, r31           C E1
        stq     r2,16(r16)              C E0
        lda     r18,-8(r18)             C E1
        stq     r3,24(r16)              C E0
        bis     r31, r31, r31           C E1
        stq     r4,32(r16)              C E0
        bis     r31, r31, r31           C E1
        stq     r5,40(r16)              C E0
        bis     r31, r31, r31           C E1
        stq     r6,48(r16)              C E0
        bis     r31, r31, r31           C E1
        stq     r7,56(r16)              C E0
        lda     r16,64(r16)             C E1
        bge     r18,$Loop               C E1
$Lend:  lda     r18,7(r18)              C E0
        blt     r18,$Lret               C E1
        ldq     r0,0(r17)               C E0
        beq     r18,$Lend0              C E1
```

```
$Loop0: stq     r0,0(r16)               C E0
        lda     r16,8(r16)              C E1
        ldq     r0,8(r17)               C E0
        lda     r18,-1(r18)             C E1
        lda     r17,8(r17)              C E0
        bgt     r18,$Loop0              C E1
$Lend0: stq     r0,0(r16)               C E0
$Lret:  ret     r31,(r26),1             C E1
EPILOGUE(mpn_copyi)
ASM_END()
----------------------------------------------------------------
gmp/mpn/powerpc64/p7/copyd.asm
----------------------------------------------------------------
dnl  PowerPC-64 mpn_copyd.

dnl  Copyright 2004, 2005, 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                  cycles/limb
C POWER3/PPC630          ?
C POWER4/PPC970          ?
C POWER5                 ?
C POWER6                 1.25
C POWER7                 1.09

C INPUT PARAMETERS
define(`rp',    `r3')
define(`up',    `r4')
define(`n',     `r5')

ASM_START()
PROLOGUE(mpn_copyd)
```

```
ifdef(`HAVE_ABI_mode32',
`       rldicl  n, n, 0,32')

        sldi    r0, n, 3
        add     up, up, r0              C point at u[] end
        add     rp, rp, r0              C point at r[] end

        cmpdi   cr0, n, 4
        blt     L(sml)

        addi    r10, n, 4
        srdi    r10, r10, 3
        mtctr   r10

        andi.   r0, n, 1
        rlwinm  r11, n, 0,30,30
        rlwinm  r12, n, 0,29,29
        cmpdi   cr6, r11, 0
        cmpdi   cr7, r12, 0

        beq     cr0, L(xx0)
L(xx1): ld      r6, -8(up)
        addi    up, up, -8
        std     r6, -8(rp)
        addi    rp, rp, -8

L(xx0): bne     cr6, L(x10)
L(x00): ld      r6, -8(up)
        ld      r7, -16(up)
        bne     cr7, L(100)
L(000): addi    rp, rp, 32
        b       L(lo0)
L(100): addi    up, up, 32
        b       L(lo4)
L(x10): ld      r8, -8(up)
        ld      r9, -16(up)
        bne     cr7, L(110)
L(010): addi    up, up, -16
        addi    rp, rp, 16
        b       L(lo2)
L(110): addi    up, up, 16
        addi    rp, rp, 48
        b       L(lo6)

L(sml): cmpdi   cr0, n, 0
        beqlr-  cr0
        mtctr   n
L(t):   ld      r6, -8(up)
        addi    up, up, -8
        std     r6, -8(rp)
        addi    rp, rp, -8
        bdnz    L(t)
        blr

        ALIGN(32)
L(top): std     r6, -8(rp)
        std     r7, -16(rp)
L(lo2): ld      r6, -8(up)
```

```
        ld      r7, -16(up)
        std     r8, -24(rp)
        std     r9, -32(rp)
L(lo0): ld      r8, -24(up)
        ld      r9, -32(up)
        std     r6, -40(rp)
        std     r7, -48(rp)
L(lo6): ld      r6, -40(up)
        ld      r7, -48(up)
        std     r8, -56(rp)
        std     r9, -64(rp)
        addi    rp, rp, -64
L(lo4): ld      r8, -56(up)
        ld      r9, -64(up)
        addi    up, up, -64
        bdnz    L(top)

L(end): std     r6, -8(rp)
        std     r7, -16(rp)
        std     r8, -24(rp)
        std     r9, -32(rp)
        blr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/powerpc64/p7/copyi.asm
------------------------------------------------------------------
dnl  PowerPC-64 mpn_copyi.

dnl  Copyright 2004, 2005, 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                  cycles/limb
```

```
C POWER3/PPC630          ?
C POWER4/PPC970          ?
C POWER5                 ?
C POWER6                 1.25
C POWER7                 1.09

C INPUT PARAMETERS
define(`rp',     `r3')
define(`up',     `r4')
define(`n',      `r5')

C TODO
C  * Try rolling the two loop leading std to the end, allowing the code to
C    handle also n = 2.
C  * Consider using 4 pointers, schedule ptr update early wrt use.

ASM_START()
PROLOGUE(mpn_copyi)

ifdef(`HAVE_ABI_mode32',
`       rldicl  n, n, 0,32')

        cmpdi   cr0, n, 4
        blt     L(sml)

        addi    r10, n, 4
        srdi    r10, r10, 3
        mtctr   r10

        andi.   r0, n, 1
        rlwinm  r11, n, 0,30,30
        rlwinm  r12, n, 0,29,29
        cmpdi   cr6, r11, 0
        cmpdi   cr7, r12, 0

        beq     cr0, L(xx0)
L(xx1): ld      r6, 0(up)
        addi    up, up, 8
        std     r6, 0(rp)
        addi    rp, rp, 8

L(xx0): bne     cr6, L(x10)
L(x00): ld      r6, 0(up)
        ld      r7, 8(up)
        bne     cr7, L(100)
L(000): addi    rp, rp, -32
        b       L(lo0)
L(100): addi    up, up, -32
        b       L(lo4)
L(x10): ld      r8, 0(up)
        ld      r9, 8(up)
        bne     cr7, L(110)
L(010): addi    up, up, 16
        addi    rp, rp, -16
        b       L(lo2)
L(110): addi    up, up, -16
        addi    rp, rp, -48
        b       L(lo6)
```

```
L(sml): cmpdi   cr0, n, 0
        beqlr-  cr0
        mtctr   n
L(t):   ld      r6, 0(up)
        addi    up, up, 8
        std     r6, 0(rp)
        addi    rp, rp, 8
        bdnz    L(t)
        blr

        ALIGN(32)
L(top): std     r6, 0(rp)
        std     r7, 8(rp)
L(lo2): ld      r6, 0(up)
        ld      r7, 8(up)
        std     r8, 16(rp)
        std     r9, 24(rp)
L(lo0): ld      r8, 16(up)
        ld      r9, 24(up)
        std     r6, 32(rp)
        std     r7, 40(rp)
L(lo6): ld      r6, 32(up)
        ld      r7, 40(up)
        std     r8, 48(rp)
        std     r9, 56(rp)
        addi    rp, rp, 64
L(lo4): ld      r8, 48(up)
        ld      r9, 56(up)
        addi    up, up, 64
        bdnz    L(top)

L(end): std     r6, 0(rp)
        std     r7, 8(rp)
        std     r8, 16(rp)
        std     r9, 24(rp)
        blr
EPILOGUE()
------------------------------------------------------------------------
gmp/mpn/powerpc64/copyd.asm
------------------------------------------------------------------------
dnl  PowerPC-64 mpn_copyd

dnl  Copyright 2004, 2005 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
```

```
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                  cycles/limb
C POWER3/PPC630          1
C POWER4/PPC970          1
C POWER5                 ?
C POWER6                 ?
C POWER7                 1.4

C INPUT PARAMETERS
C rp    r3
C up    r4
C n     r5

ASM_START()
PROLOGUE(mpn_copyd)
        rldic.  r0, r5, 3, 59   C r0 = (r5 & 3) << 3; cr0 = (n == 4t)?
        cmpldi  cr6, r0, 16     C cr6 = (n cmp 4t + 2)?

ifdef(`HAVE_ABI_mode32',
`       rldic   r6, r5, 3, 32', C byte count corresponding to n
`       rldicr  r6, r5, 3, 60') C byte count corresponding to n

        addi    r5, r5, 4       C compute...
ifdef(`HAVE_ABI_mode32',
`       rldicl  r5, r5, 62,34', C ...branch count
`       rldicl  r5, r5, 62, 2') C ...branch count
        mtctr   r5

        add     r4, r4, r6
        add     r3, r3, r6
        sub     r4, r4, r0      C offset up
        sub     r3, r3, r0      C offset rp

        beq     cr0, L(L00)
        blt     cr6, L(L01)
        beq     cr6, L(L10)
        b       L(L11)

        ALIGN(16)
L(oop): ld      r6, 24(r4)
        std     r6, 24(r3)
L(L11): ld      r6, 16(r4)
        std     r6, 16(r3)
L(L10): ld      r6, 8(r4)
        std     r6, 8(r3)
L(L01): ld      r6, 0(r4)
        std     r6, 0(r3)
```

```
L(LOO): addi    r4, r4, -32
        addi    r3, r3, -32
        bdnz    L(oop)

        blr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/powerpc64/copyi.asm
------------------------------------------------------------------
dnl  PowerPC-64 mpn_copyi.

dnl  Copyright 2004, 2005 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C                  cycles/limb
C POWER3/PPC630          1
C POWER4/PPC970          1
C POWER5                 ?
C POWER6                 ?
C POWER7                 1.4

C INPUT PARAMETERS
C rp    r3
C up    r4
C n     r5

ASM_START()
PROLOGUE(mpn_copyi)
        rldic.  r0, r5, 3, 59   C r0 = (r5 & 3) << 3; cr0 = (n == 4t)?
        cmpldi  cr6, r0, 16     C cr6 = (n cmp 4t + 2)?

        addi    r5, r5, 4       C compute...
```

```
ifdef(`HAVE_ABI_mode32',
`       rldicl  r5, r5, 62,34', C ...branch count
`       rldicl  r5, r5, 62, 2') C ...branch count
        mtctr   r5

        add     r4, r4, r0      C offset up
        add     r3, r3, r0      C offset rp

        beq     cr0, L(LOO)
        blt     cr6, L(L01)
        beq     cr6, L(L10)
        b       L(L11)

        ALIGN(16)
L(oop): ld      r6, -32(r4)
        std     r6, -32(r3)
L(L11): ld      r6, -24(r4)
        std     r6, -24(r3)
L(L10): ld      r6, -16(r4)
        std     r6, -16(r3)
L(L01): ld      r6, -8(r4)
        std     r6, -8(r3)
L(LOO): addi    r4, r4, 32
        addi    r3, r3, 32
        bdnz    L(oop)

        blr
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/arm64/copyd.asm
------------------------------------------------------------------
dnl  ARM64 mpn_copyd.

dnl  Copyright 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
```

```
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C Cortex-A53     ?
C Cortex-A57     ?

changecom(@&*$)

define(`rp', `x0')
define(`up', `x1')
define(`n',  `x2')

ASM_START()
PROLOGUE(mpn_copyd)
        add     rp, rp, n, lsl #3
        add     up, up, n, lsl #3

        cmp     n, #3
        b.le    L(bc)

C Copy until rp is 128-bit aligned
        tbz     rp, #3, L(al2)
        sub     up, up, #8
        ld1     {v22.1d}, [up]
        sub     n, n, #1
        sub     rp, rp, #8
        st1     {v22.1d}, [rp]

L(al2): sub     up, up, #16
        ld1     {v26.2d}, [up]
        subs    n, n, #6
        sub     rp, rp, #16                     C offset rp for loop
        b.lt    L(end)

        sub     up, up, #16                     C offset up for loop
        mov     x12, #-16

        ALIGN(16)
L(top): ld1     {v22.2d}, [up], x12
        st1     {v26.2d}, [rp], x12
        ld1     {v26.2d}, [up], x12
        st1     {v22.2d}, [rp], x12
        subs    n, n, #4
        b.ge    L(top)

        add     up, up, #16                     C undo up offset

L(end): st1     {v26.2d}, [rp]

C Copy last 0-3 limbs.  Note that rp is aligned after loop, but not when we
C arrive here via L(bc)
L(bc):  tbz     n, #1, L(tl1)
        sub     up, up, #16
        ld1     {v22.2d}, [up]
        sub     rp, rp, #16
        st1     {v22.2d}, [rp]
L(tl1): tbz     n, #0, L(tl2)
```

```
        sub     up, up, #8
        ld1     {v22.1d}, [up]
        sub     rp, rp, #8
        st1     {v22.1d}, [rp]
L(tl2): ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/arm64/copyi.asm
------------------------------------------------------------------
dnl  ARM64 mpn_copyi.

dnl  Copyright 2013 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.

include(`../config.m4')

C            cycles/limb
C Cortex-A53     ?
C Cortex-A57     ?

changecom(@&*$)

define(`rp', `x0')
define(`up', `x1')
define(`n',  `x2')

ASM_START()
PROLOGUE(mpn_copyi)
        cmp     n, #3
        b.le    L(bc)

C Copy until rp is 128-bit aligned
        tbz     rp, #3, L(al2)
        ld1     {v22.1d}, [up], #8
```

```
        sub     n, n, #1
        st1     {v22.1d}, [rp], #8

L(al2): ld1     {v26.2d}, [up], #16
        subs    n, n, #6
        b.lt    L(end)

        ALIGN(16)
L(top): ld1     {v22.2d}, [up], #16
        st1     {v26.2d}, [rp], #16
        ld1     {v26.2d}, [up], #16
        st1     {v22.2d}, [rp], #16
        subs    n, n, #4
        b.ge    L(top)

L(end): st1     {v26.2d}, [rp], #16

C Copy last 0-3 limbs.  Note that rp is aligned after loop, but not when we
C arrive here via L(bc)
L(bc):  tbz     n, #1, L(tl1)
        ld1     {v22.2d}, [up], #16
        st1     {v22.2d}, [rp], #16
L(tl1): tbz     n, #0, L(tl2)
        ld1     {v22.1d}, [up]
        st1     {v22.1d}, [rp]
L(tl2): ret
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/s390_32/copyd.asm
------------------------------------------------------------------
dnl  S/390-32 mpn_copyd

dnl  Copyright 2011 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.
```

```
include(`../config.m4')

C            cycles/limb
C            cycles/limb
C z900           1.65
C z990           1.125
C z9             ?
C z10            ?
C z196           ?

C FIXME:
C  * Avoid saving/restoring callee-saves registers for n < 3.  This could be
C    done by setting rp=r1, up=r2, i=r0 and r3,r4,r5 for clock regs.
C    We could then use r3...r10 in main loop.

C INPUT PARAMETERS
define(`rp_param',      `%r2')
define(`up_param',      `%r3')
define(`n',             `%r4')

define(`rp',    `%r8')
define(`up',    `%r9')

ASM_START()
PROLOGUE(mpn_copyd)
        stm     %r6, %r11, 24(%r15)

        lr      %r1, n
        sll     %r1, 2
        la      %r10, 8(n)
        ahi     %r1, -32
        srl     %r10, 3
        lhi     %r11, -32

        la      rp, 0(%r1,rp_param)     C FIXME use lay on z990 and later
        la      up, 0(%r1,up_param)     C FIXME use lay on z990 and later

        lhi     %r7, 7
        nr      %r7, n                  C n mod 8
        chi     %r7, 2
        jh      L(b34567)
        chi     %r7, 1
        je      L(b1)
        jh      L(b2)

L(b0):  brct    %r10, L(top)
        j       L(end)

L(b1):  l       %r0, 28(up)
        ahi     up, -4
        st      %r0, 28(rp)
        ahi     rp, -4
        brct    %r10, L(top)
        j       L(end)

L(b2):  lm      %r0, %r1, 24(up)
        ahi     up, -8
```

```
        stm     %r0, %r1, 24(rp)
        ahi     rp, -8
        brct    %r10, L(top)
        j       L(end)

L(b34567):
        chi     %r7, 4
        jl      L(b3)
        je      L(b4)
        chi     %r7, 6
        je      L(b6)
        jh      L(b7)

L(b5):  lm      %r0, %r4, 12(up)
        ahi     up, -20
        stm     %r0, %r4, 12(rp)
        ahi     rp, -20
        brct    %r10, L(top)
        j       L(end)

L(b3):  lm      %r0, %r2, 20(up)
        ahi     up, -12
        stm     %r0, %r2, 20(rp)
        ahi     rp, -12
        brct    %r10, L(top)
        j       L(end)

L(b4):  lm      %r0, %r3, 16(up)
        ahi     up, -16
        stm     %r0, %r3, 16(rp)
        ahi     rp, -16
        brct    %r10, L(top)
        j       L(end)

L(b6):  lm      %r0, %r5, 8(up)
        ahi     up, -24
        stm     %r0, %r5, 8(rp)
        ahi     rp, -24
        brct    %r10, L(top)
        j       L(end)

L(b7):  lm      %r0, %r6, 4(up)
        ahi     up, -28
        stm     %r0, %r6, 4(rp)
        ahi     rp, -28
        brct    %r10, L(top)
        j       L(end)

L(top): lm      %r0, %r7, 0(up)
        la      up, 0(%r11,up)
        stm     %r0, %r7, 0(rp)
        la      rp, 0(%r11,rp)
        brct    %r10, L(top)

L(end): lm      %r6, %r11, 24(%r15)
        br      %r14
EPILOGUE()
------------------------------------------------------------------
gmp/mpn/s390_32/copyi.asm
```

```
------------------------------------------------------------------
dnl  S/390-32 mpn_copyi

dnl  Copyright 2011 Free Software Foundation, Inc.

dnl  This file is part of the GNU MP Library.
dnl
dnl  The GNU MP Library is free software; you can redistribute it and/or modify
dnl  it under the terms of either:
dnl
dnl    * the GNU Lesser General Public License as published by the Free
dnl      Software Foundation; either version 3 of the License, or (at your
dnl      option) any later version.
dnl
dnl  or
dnl
dnl    * the GNU General Public License as published by the Free Software
dnl      Foundation; either version 2 of the License, or (at your option) any
dnl      later version.
dnl
dnl  or both in parallel, as here.
dnl
dnl  The GNU MP Library is distributed in the hope that it will be useful, but
dnl  WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
dnl  or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
dnl  for more details.
dnl
dnl  You should have received copies of the GNU General Public License and the
dnl  GNU Lesser General Public License along with the GNU MP Library.  If not,
dnl  see https://www.gnu.org/licenses/.


include(`../config.m4')

C            cycles/limb
C z900           0.75
C z990           0.375
C z9             ?
C z10            ?
C z196           ?

C NOTE
C  * This is based on GNU libc memcpy which was written by Martin Schwidefsky.

C INPUT PARAMETERS
define(`rp',    `%r2')
define(`up',    `%r3')
define(`n',     `%r4')

ASM_START()
PROLOGUE(mpn_copyi)
        ltr     %r4, %r4
        sll     %r4, 2
        je      L(rtn)
        ahi     %r4, -1
        lr      %r5, %r4
        srl     %r5, 8
        ltr     %r5, %r5                C < 256 bytes to copy?
        je      L(1)
```

```
L(top): mvc     0(256, rp), 0(up)
        la      rp, 256(rp)
        la      up, 256(up)
        brct    %r5, L(top)

L(1):   bras    %r5, L(2)               C make r5 point to mvc insn
        mvc     0(1, rp), 0(up)
L(2):   ex      %r4, 0(%r5)             C execute mvc with length ((n-1) mod 256)+1
L(rtn): br      %r14
EPILOGUE()
```

---

gmp/COPYINGv3

```
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
```

authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible

```
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License.  If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.
```

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this

```
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
```

that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for

unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

    e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

  All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the

additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License. Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License. If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program. Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance. However,
nothing other than this License grants you permission to propagate or
modify any covered work. These actions infringe copyright if you do
not accept this License. Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License. You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations. If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could

give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license

you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published

by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

```
    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <https://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<https://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<https://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
gmp/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
```

```
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
protecting users' freedom to change the software.  The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable.  Therefore, we
have designed this version of the GPL to prohibit the practice for those
products.  If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary.  To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.
```

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable

work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the

```
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
```

a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

  If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

```
    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
```

this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and

propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey

the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD

```
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
```

<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs. If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License. But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----
gmp/COPYING.LESSERv3

                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library. The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

```
  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library.  You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.
```

1) Use a suitable shared library mechanism for linking with the
Library. A suitable mechanism is one that (a) uses at run time
a copy of the Library already present on the user's computer
system, and (b) will operate properly with a modified version
of the Library that is interface-compatible with the Linked
Version.

e) Provide Installation Information, but only if you would otherwise
be required to provide such information under section 6 of the
GNU GPL, and only to the extent that such information is
necessary to install and execute a modified version of the
Combined Work produced by recombining or relinking the
Application with a modified version of the Linked Version. (If
you use option 4d0, the Installation Information must accompany
the Minimal Corresponding Source and Corresponding Application
Code. If you use option 4d1, you must provide the Installation
Information in the manner specified by section 6 of the GNU GPL
for conveying Corresponding Source.)

5. Combined Libraries.

You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

a) Accompany the combined library with a copy of the same work based
on the Library, uncombined with any other library facilities,
conveyed under the terms of this License.

b) Give prominent notice with the combined library that part of it
is a work based on the Library, and explaining where to find the
accompanying uncombined form of the same work.

6. Revised Versions of the GNU Lesser General Public License.

The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
---

gmp/COPYINGv2

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in

```
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
```

However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates

the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>

```
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
gmp/tests/devel/copy.c
----------------------------------------------------------------------
/*
Copyright 1999-2001, 2004, 2009, 2011 Free Software Foundation, Inc.

This file is part of the GNU MP Library test suite.

The GNU MP Library test suite is free software; you can redistribute it
and/or modify it under the terms of the GNU General Public License as
published by the Free Software Foundation; either version 3 of the License,
or (at your option) any later version.
```

```
The GNU MP Library test suite is distributed in the hope that it will be
useful, but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General
Public License for more details.

You should have received a copy of the GNU General Public License along with
the GNU MP Library test suite.  If not, see https://www.gnu.org/licenses/.  */

#include <stdlib.h>
#include <string.h>
#include <stdio.h>
#include "gmp.h"
#include "gmp-impl.h"
#include "tests.h"

#ifdef OPERATION_copyi
#define func MPN_COPY_INCR
#define reffunc refmpn_copyi
#define funcname "MPN_COPY_INCR"
#endif

#ifdef OPERATION_copyd
#define func MPN_COPY_DECR
#define reffunc refmpn_copyd
#define funcname "MPN_COPY_DECR"
#endif

#if defined (USG) || defined (__SVR4) || defined (_UNICOS) || defined (__hpux)
#include <time.h>

int
cputime ()
{
  if (CLOCKS_PER_SEC < 100000)
    return clock () * 1000 / CLOCKS_PER_SEC;
  return clock () / (CLOCKS_PER_SEC / 1000);
}
#else
#include <sys/types.h>
#include <sys/time.h>
#include <sys/resource.h>

int
cputime ()
{
  struct rusage rus;

  getrusage (0, &rus);
  return rus.ru_utime.tv_sec * 1000 + rus.ru_utime.tv_usec / 1000;
}
#endif

static void print_posneg (mp_limb_t);
static void mpn_print (mp_ptr, mp_size_t);

#define LXW ((int) (2 * sizeof (mp_limb_t)))
#define M * 1000000

#ifndef CLOCK
```

```
#error "Don't know CLOCK of your machine"
#endif

#ifndef OPS
#define OPS (CLOCK/5)
#endif
#ifndef SIZE
#define SIZE 496
#endif
#ifndef TIMES
#define TIMES OPS/(SIZE+1)
#endif

int
main (int argc, char **argv)
{
  mp_ptr s1, dx, dy;
  int i;
  long t0, t;
  unsigned int test;
  mp_size_t size;
  unsigned int ntests;

  s1 = malloc (SIZE * sizeof (mp_limb_t));
  dx = malloc ((SIZE + 2) * sizeof (mp_limb_t));
  dy = malloc ((SIZE + 2) * sizeof (mp_limb_t));

  ntests = ~(unsigned) 0;
  if (argc == 2)
    ntests = strtol (argv[1], 0, 0);

  for (test = 1; test <= ntests; test++)
    {
#if TIMES == 1 && ! defined (PRINT)
      if (test % (SIZE > 100000 ? 1 : 100000 / SIZE) == 0)
        {
          printf ("\r%u", test);
          fflush (stdout);
        }
#endif

#ifdef RANDOM
      size = random () % SIZE + 1;
#else
      size = SIZE;
#endif

      dx[0] = 0x87654321;
      dy[0] = 0x87654321;
      dx[size+1] = 0x12345678;
      dy[size+1] = 0x12345678;

#if TIMES != 1
      mpn_random (s1, size);

      t0 = cputime();
      for (i = 0; i < TIMES; i++)
        func (dx+1, s1, size);
      t = cputime() - t0;
```

```
      printf (funcname ":    %5ldms (%.3f cycles/limb)\n",
              t, ((double) t * CLOCK) / (TIMES * size * 1000.0));
#endif

#ifndef NOCHECK
      mpn_random2 (s1, size);

#ifdef PRINT
      mpn_print (s1, size);
#endif

      /* Put garbage in the destination.  */
      for (i = 0; i < size; i++)
        {
          dx[i+1] = 0xdead;
          dy[i+1] = 0xbeef;
        }

      reffunc (dx+1, s1, size);
      func (dy+1, s1, size);

#ifdef PRINT
      mpn_print (dx+1, size);
      mpn_print (dy+1, size);
#endif

      if (mpn_cmp (dx, dy, size+2) != 0
          || dx[0] != 0x87654321 || dx[size+1] != 0x12345678)
        {
          mp_size_t s, e;
          for (s = 0;; s++)
            if ((unsigned long long) (dx+1)[s] != (unsigned long long) (dy+1)[s])
              break;
          for (e = size - 1;; e--)
            if ((unsigned long long) (dx+1)[e] != (unsigned long long) (dy+1)[e])
              break;
#ifndef PRINT
          for (i = s; i <= e; i++)
            {
              printf ("%6d: ", i);
              printf ("%0*llX ", LXW, (unsigned long long) (dx+1)[i]);
              printf ("%0*llX ", LXW, (unsigned long long) (dy+1)[i]);
              print_posneg ((dy+1)[i] - (dx+1)[i]);
              printf ("\n");
            }
#endif
          printf ("\n");
          if (dy[0] != 0x87654321)
            printf ("clobbered at low end\n");
          if (dy[size+1] != 0x12345678)
            printf ("clobbered at high end\n");
          printf ("TEST NUMBER %u\n", test);
          abort();
        }
#endif
    }
  exit (0);
}
```

```
static void
print_posneg (mp_limb_t d)
{
  char buf[LXW + 2];
  if (d == 0)
    printf (" %*X", LXW, 0);
  else if (-d < d)
    {
      sprintf (buf, "%llX", (unsigned long long) -d);
      printf ("%*s-%s", LXW - (int) strlen (buf), "", buf);
    }
  else
    {
      sprintf (buf, "%llX", (unsigned long long) d);
      printf ("%*s+%s", LXW - (int) strlen (buf), "", buf);
    }
}

static void
mpn_print (mp_ptr p, mp_size_t size)
{
  mp_size_t i;

  for (i = size - 1; i >= 0; i--)
    {
#ifdef _LONG_LONG_LIMB
      printf ("%0*lX%0*lX", (int) (sizeof(mp_limb_t)),
              (unsigned long) (p[i] >> (GMP_LIMB_BITS/2)),
              (int) (sizeof(mp_limb_t)), (unsigned long) (p[i]));
#else
      printf ("%0*lX", (int) (2 * sizeof(mp_limb_t)), p[i]);
#endif
#ifdef SPACE
      if (i != 0)
        printf (" ");
#endif
    }
  puts ("");
}
```

3.38 gperf

```
gperf
------------------------------------------------------------------
gperf/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

```
  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.39 grep

```
grep
------------------------------------------------------------------
grep/COPYING
------------------------------------------------------------------

                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
```

modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a

menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with

the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not

```
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this

License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;

the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the

rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is

conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you

to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.40 groff

```
groff
-----------------------------------------------------------------
groff/contrib/mom/copyright
-----------------------------------------------------------------
-*- text -*-
AUTHOR
------
Peter Schaffter (peter@schaffter.ca)
3-355 Lafontaine Ave
Vanier (ON) CANADA
K1L 6X6

=================================================================

The groff macro file om.tmac and the html documentation pertaining to
it are Copyright (C) 2004-2014 Peter Schaffter.

om.tmac is issued under the GNU General Public License, a full copy of
which can be had at

    http://www.gnu.org/licenses/gpl.html

The html documentation pertaining to om.tmac is issued under the GNU
Free Documentation License, a full copy of which can be had at

    http://www.gnu.org/copyleft/fdl.html

=================================================================
-----------------------------------------------------------------
groff/LICENSES
-----------------------------------------------------------------
    Copyright 2003-2014 Free Software Foundation, Inc.

    Copying and distribution of this file, with or without modification,
    are permitted in any medium without royalty provided the copyright
    notice and this notice are preserved.

LICENSES
--------

The groff program is a free software project.  It is licensed under the GNU
General Public License (GNU GPL), version 3 or later.

The file COPYING in the top directory of the groff source package contains a
copy of the GPL that was downloaded from the GNU web site
http://www.gnu.org/copyleft/gpl.txt at 3 jan 2009.

All files part of groff are licensed under this version of the GPL (or
licenses which are compatible with the GPL). You are free to choose
version 3 or any subsequent version of the GPL.

The GPL names an address where you can get the actual version by normal
post.  Further information is found in the internet at
http://www.gnu.org/copyleft.
```

The groff program is a GNU package, and the copyright of all files of the
groff source package which are under the GPL has been assigned to the Free
Sofware Foundation (FSF). Information on GNU and FSF is found at
http://www.fsf.org/.

Here a list of files which are distributed with groff but which aren't
part of it (this is, they either have a non-GPL license, or the copyright
hasn't been assigned to the FSF).

  Source Files

  . The file `src/libs/snprintf/snprintf.c', written by Mark Martinec
    <mark.martinec@ijs.si>.

    Please look into snprintf.c for the copyright message.

    The complete snprintf package together with documentation is available
    from

      http://www.ijs.si/software/snprintf/   .

  . The `grn' preprocessor, written by Barry Roitblat <barry@rentonww.com>
    and David Slattengren <slatteng@Xinet.COM>. These files have been part
    of the original Berkeley ditroff distribution, without AT&T code, and
    are in the public domain.

    The original package can be found at
    http://ftp.cs.wisc.edu/pub/misc/grn.tar.Z   .

      src/preproc/grn/gprint.h
      src/preproc/grn/hdb.cpp
      src/preproc/grn/hgraph.cpp
      src/preproc/grn/hpoint.cpp
      src/preproc/grn/main.cpp

  . The `gxditview' output device.  It is based on X11's `xditview' program
    and thus has the X license.

      src/devices/xditview/DESC.in
      src/devices/xditview/Dvi.c
      src/devices/xditview/Dvi.h
      src/devices/xditview/DviP.h
      src/devices/xditview/FontMap
      src/devices/xditview/GXditview.ad
      src/devices/xditview/Menu.h
      src/devices/xditview/ad2c
      src/devices/xditview/device.c
      src/devices/xditview/device.h
      src/devices/xditview/draw.c
      src/devices/xditview/font.c
      src/devices/xditview/gray1.bm
      src/devices/xditview/gray2.bm
      src/devices/xditview/gray3.bm
      src/devices/xditview/gray4.bm
      src/devices/xditview/gray5.bm
      src/devices/xditview/gray6.bm

```
    src/devices/xditview/gray7.bm
    src/devices/xditview/gray8.bm
    src/devices/xditview/gxditview.man
    src/devices/xditview/lex.c
    src/devices/xditview/page.c
    src/devices/xditview/parse.c
    src/devices/xditview/xdit.bm
    src/devices/xditview/xdit_mask.bm
    src/devices/xditview/xditview.c

    src/include/DviChar.h
    src/include/XFontName.h

    src/libs/libxutil/DviChar.c
    src/libs/libxutil/XFontName.c


Macro Packages
--------------

. The -mdoc macro set, using the BSD license.

    tmac/doc.tmac
    tmac/doc-old.tmac
    tmac/doc-common
    tmac/doc-ditroff
    tmac/doc-nroff
    tmac/doc-syms
    tmac/groff_mdoc.man

. The -me macro set, using the BSD license.

    tmac/e.tmac
    tmac/groff_me.man
    doc/meintro.me
    doc/meintro_fr.me
    doc/meref.me


Hyphenation Patterns
--------------------

. The file `tmac/hyphen.us' is identical to the file `hyphen.tex', part of
  the TeX system written by Donald E. Knuth; the master file can be found
  at

    ftp://labrea.stanford.edu/pub/tex/dist/lib/hyphen.tex    .

  It has been renamed for consistency, i.e., to make patterns available
  under the filenames `hyphen.<language>', e.g. `hyphen.de' or
  `hyphen.uk'.

  See the file itself for a copyright notice.

. The file `tmac/hyphen.fr' contains the same patterns as the file
  `frhyph.tex' (for TeX), which can be found at

    http://dante.ctan.org/CTAN/language/hyphenation/frhyph.tex    .
```

```
    The patterns have been converted to a format groff can understand.

    See the file itself for a copyright notice.

  . The file `tmac/hyphen.sv' is identical to the file `svhyph.tex', which
    can be found at

      http://dante.ctan.org/CTAN/language/hyphenation/svhyph.tex    .

    See the file itself for a copyright notice.

  . The files `tmac/hyphen.det' and `tmac/hyphen.den' contain the same
    patterns as the files `dehyphn.tex' and `dehypht.tex' (for TeX), which
    can be found at

      http://dante.ctan.org/CTAN/language/hyphenation/dehyphn.tex
      http://dante.ctan.org/CTAN/language/hyphenation/dehypht.tex    .

    The patterns have been converted to a format groff can understand.

    See the files themselves for a copyright notice.

  . The file `tmac/hyphenex.det' is identical to the file `dehyphtex.tex',
    which can be found at

      http://dante.ctan.org/CTAN/language/hyphenation/dehyphtex.tex    .

    See the file itself for a copyright notice.

  . The file `tmac/hyphen.cs' contains the same patterns as the file
    `czhyphen.tex' (for TeX), which can be found in the archive

      http://dante.ctan.org/CTAN/macros/cstex/base/csplain.tar.gz    .

    The patterns have been converted to a format groff can understand.

    See the file itself for a copyright notice.

EOF
----------------------------------------------------------------------
groff/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
```

GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable. Therefore, we
have designed this version of the GPL to prohibit the practice for those
products. If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable

work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the

```
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
```

a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

  If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

```
    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
```

this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and

propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey

the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions. However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD

```
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
```

<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

3.41 grub

```
grub
----------------------------------------------------------------------
grub/unicode/COPYING
----------------------------------------------------------------------
COPYRIGHT AND PERMISSION NOTICE

Copyright © 1991-2011 Unicode, Inc. All rights reserved. Distributed under the Terms of Use in http://

Permission is hereby granted, free of charge, to any person obtaining a copy of the Unicode data files

THE DATA FILES AND SOFTWARE ARE PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, IN

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or
----------------------------------------------------------------------
grub/themes/starfield/COPYING.CC-BY-SA-3.0
----------------------------------------------------------------------
    CREATIVE COMMONS CORPORATION IS NOT A LAW FIRM AND DOES NOT PROVIDE LEGAL SERVICES. DISTRIBUTION O

License

THE WORK (AS DEFINED BELOW) IS PROVIDED UNDER THE TERMS OF THIS CREATIVE COMMONS PUBLIC LICENSE ("CCPL

BY EXERCISING ANY RIGHTS TO THE WORK PROVIDED HERE, YOU ACCEPT AND AGREE TO BE BOUND BY THE TERMS OF T

1. Definitions

    "Adaptation" means a work based upon the Work, or upon the Work and other pre-existing works, such
    "Collection" means a collection of literary or artistic works, such as encyclopedias and anthologi
    "Creative Commons Compatible License" means a license that is listed at http://creativecommons.org
    "Distribute" means to make available to the public the original and copies of the Work or Adaptati
    "License Elements" means the following high-level license attributes as selected by Licensor and i
    "Licensor" means the individual, individuals, entity or entities that offer(s) the Work under the
    "Original Author" means, in the case of a literary or artistic work, the individual, individuals,
    "Work" means the literary and/or artistic work offered under the terms of this License including w
    "You" means an individual or entity exercising rights under this License who has not previously vi
    "Publicly Perform" means to perform public recitations of the Work and to communicate to the publi
    "Reproduce" means to make copies of the Work by any means including without limitation by sound or

2. Fair Dealing Rights. Nothing in this License is intended to reduce, limit, or restrict any uses fre

3. License Grant. Subject to the terms and conditions of this License, Licensor hereby grants You a wo

    to Reproduce the Work, to incorporate the Work into one or more Collections, and to Reproduce the
    to create and Reproduce Adaptations provided that any such Adaptation, including any translation i
    to Distribute and Publicly Perform the Work including as incorporated in Collections; and,
    to Distribute and Publicly Perform Adaptations.

    For the avoidance of doubt:
        Non-waivable Compulsory License Schemes. In those jurisdictions in which the right to collect
        Waivable Compulsory License Schemes. In those jurisdictions in which the right to collect roya
        Voluntary License Schemes. The Licensor waives the right to collect royalties, whether individ

The above rights may be exercised in all media and formats whether now known or hereafter devised. The

4. Restrictions. The license granted in Section 3 above is expressly made subject to and limited by th
```

You may Distribute or Publicly Perform the Work only under the terms of this License. You must include a co
You may Distribute or Publicly Perform an Adaptation only under the terms of: (i) this License; (ii) a late
If You Distribute, or Publicly Perform the Work or any Adaptations or Collections, You must, unless a reque
Except as otherwise agreed in writing by the Licensor or as may be otherwise permitted by applicable law, i

5. Representations, Warranties and Disclaimer

UNLESS OTHERWISE MUTUALLY AGREED TO BY THE PARTIES IN WRITING, LICENSOR OFFERS THE WORK AS-IS AND MAKES NO REPR

6. Limitation on Liability. EXCEPT TO THE EXTENT REQUIRED BY APPLICABLE LAW, IN NO EVENT WILL LICENSOR BE LIABL

7. Termination

This License and the rights granted hereunder will terminate automatically upon any breach by You of the te
Subject to the above terms and conditions, the license granted here is perpetual (for the duration of the a

8. Miscellaneous

Each time You Distribute or Publicly Perform the Work or a Collection, the Licensor offers to the recipient
Each time You Distribute or Publicly Perform an Adaptation, Licensor offers to the recipient a license to t
If any provision of this License is invalid or unenforceable under applicable law, it shall not affect the
No term or provision of this License shall be deemed waived and no breach consented to unless such waiver c
This License constitutes the entire agreement between the parties with respect to the Work licensed here. T
The rights granted under, and the subject matter referenced, in this License were drafted utilizing the ter

---

grub/COPYING

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The GNU General Public License is a free, copyleft license for
software and other kinds of works.

The licenses for most software and other practical works are designed
to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have

certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable. Therefore, we
have designed this version of the GPL to prohibit the practice for those
products. If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License. Each licensee is addressed as "you". "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based

on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding

Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

  When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the

```
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling.  In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage.  For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product.  A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source.  The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information.  But this requirement does not apply
if neither you nor any third party retains the ability to install
```

modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for

```
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
```

covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means,

then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients. "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program.  If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
<program>  Copyright (C) <year>  <name of author>
This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

3.42 gzip

```
gzip
-------------------------------------------------------------------
gzip/COPYING
-------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

```
  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
```

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.43 iana-etc

```
iana-etc
---------------------------------------------------------------
iana-etc/COPYING
---------------------------------------------------------------
Open Software License ("OSL") v. 3.0

This Open Software License (the "License") applies to any original work of authorship (the "Original Work") who

Licensed under the Open Software License version 3.0

1) Grant of Copyright License. Licensor grants You a worldwide, royalty-free, non-exclusive, sublicensable lice

a) to reproduce the Original Work in copies, either alone or as part of a collective work;

b) to translate, adapt, alter, transform, modify, or arrange the Original Work, thereby creating derivative wor

c) to distribute or communicate copies of the Original Work and Derivative Works to the public, with the provis

d) to perform the Original Work publicly; and

e) to display the Original Work publicly.

2) Grant of Patent License. Licensor grants You a worldwide, royalty-free, non-exclusive, sublicensable license

3) Grant of Source Code License. The term "Source Code" means the preferred form of the Original Work for makin

4) Exclusions From License Grant. Neither the names of Licensor, nor the names of any contributors to the Origi

5) External Deployment. The term "External Deployment" means the use, distribution, or communication of the Ori

6) Attribution Rights. You must retain, in the Source Code of any Derivative Works that You create, all copyrig

7) Warranty of Provenance and Disclaimer of Warranty. Licensor warrants that the copyright in and to the Origin

8) Limitation of Liability. Under no circumstances and under no legal theory, whether in tort (including negli

9) Acceptance and Termination. If, at any time, You expressly assented to this License, that assent indicates y

10) Termination for Patent Action. This License shall terminate automatically and You may no longer exercise an

11) Jurisdiction, Venue and Governing Law. Any action or suit relating to this License may be brought only in t

12) Attorneys' Fees. In any action to enforce the terms of this License or seeking damages relating thereto, th

13) Miscellaneous. If any provision of this License is held to be unenforceable, such provision shall be reform

14) Definition of "You" in This License. "You" throughout this License, whether in upper or lower case, means a

15) Right to Use. You may use the Original Work in all ways not otherwise restricted or conditioned by this Lic

16) Modification of This License. This License is Copyright (c) 2005 Lawrence Rosen. Permission is granted to c
```

3.44 inetutils

```
inetutils
-------------------------------------------------------------------
inetutils/COPYING
-------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.45 ipmitool

```
ipmitool
--------------------------------------------------------------------
ipmitool/COPYING
--------------------------------------------------------------------
Copyright (c) 2003 Sun Microsystems, Inc.  All Rights Reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

Redistribution of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.

Redistribution in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.

Neither the name of Sun Microsystems, Inc. or the names of
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.

This software is provided "AS IS," without a warranty of any kind.
ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES,
INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED.
SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE
FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING
OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES.  IN NO EVENT WILL
SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA,
OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR
PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF
LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE,
EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.
```

3.46 iproute2

```
iproute2
----------------------------------------------------------------------
iproute2/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                       51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
```

3.47 iptables

```
iptables
-----------------------------------------------------------------
iptables/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
```

3.48 kbd

```
kbd
----------------------------------------------------------------------
kbd/COPYING
----------------------------------------------------------------------
The file
        kbdrate.c
is Copyright (C) 1992 Rickard E. Faith.

The files
        dumpkeys.c loadkeys.y loadkeys.analyze.l ksyms.c ksyms.h
        showkey.c keymaps.5 loadkeys.1 dumpkeys.1 showkey.1
are Copyright (C) 1993 Risto Kankkunen.

The files
        setfont.c setfont.8 mapscrn.c mapscrn.8
(and changes to loadkeys.y)
are Copyright (C) 1993 Eugene G. Crosser.

The files
        psfaddtable.1 psfgettable.1 psfstriptable.1
are Copyright (C) 1994 H. Peter Anvin.

The files
        chvt.c clrunimap.c deallocvt.c fgconsole.c findfile.c
        getfd.c getkeycodes.c getunimap.c kbd_mode.c loadunimap.c
        psffontop.c psfxtable.c resizecons.c screendump.c setkeycodes.c
        setleds.c setmetamode.c setvesablank.c showconsolefont.c
        spawn_console.c spawn_login.c
        chvt.1 deallocvt.1 kbd_mode.1 setleds.1 setmetamode.1
        getkeycodes.8 loadunimap.8 resizecons.8 setkeycodes.8
        kbd.FAQ.*
(and changes to earlier mentioned programs)
are Copyright (C) 1994-1999 Andries E. Brouwer.

The file
        openvt.c
is Copyright (C) 1994 by Jon Tombs <jon@gtex02.us.es>
portions also authors: Andries E. Brouwer <aeb@cwi.nl>
                       Joshua Spoerri <josh@cooper.edu>
                       Chuck Martin <cmartin@bigfoot.com>
                       Alexey Gladkov <gladkov.alexey@gmail.com>

The file
        kbdinfo.c
is Copyright (C) 2011 Alexey Gladkov.

The file
       setvtrgb.c
is Copyright (C) 2011 Alexey Gladkov,
portions also Copyright (C) 2011 Canonical Ltd.
              Authors: Seth Forshee <seth.forshee@canonical.com>
                       Dustin Kirkland <kirkland@canonical.com>

The files
       auth.c pam_auth.h pam.c parse.c screen.c username.c vlock.c vlock.h vt.c
```

```
is Copyright (C) 1994-1998 Michael K. Johnson <johnsonm@redhat.com>
   Copyright (C) 2002-2006 Dmitry V. Levin <ldv@altlinux.org>

All files in this package may be freely copied under the terms
of the GNU General Public License (GPL), version 2, or at your
option any later version - except possibly for the restrictions
mentioned in the directory consolefonts.
```

3.49 kmod

kmod
---
kmod/libkmod/COPYING

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

Copyright (C) 1991, 1999 Free Software Foundation, Inc.
51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and

modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of

the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference

directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work

based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice
```

That's all there is to it!

---

kmod/COPYING

GNU LESSER GENERAL PUBLIC LICENSE
Version 2.1, February 1999

```
 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.
```

```
[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.


  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.
```

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new

versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the

```
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


------------------------------------------------------------------
kmod/testsuite/COPYING
------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
```

can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

  To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated

interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of

this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not.

Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above

specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties with
this License.

  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,

write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change. You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library. It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU
    Lesser General Public License for more details.

```
    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


----------------------------------------------------------------------
kmod/tools/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.
```

```
  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.
```

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for

making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING

```
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
```

Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.

3.50 less

```
less
---------------------------------------------------------------------
less/LICENSE
---------------------------------------------------------------------
                          Less License
                          ------------

Less
Copyright (C) 1984-2016  Mark Nudelman

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice in the documentation and/or other materials provided with
   the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---------------------------------------------------------------------
less/COPYING
---------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.
```

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this

License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but

which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

  When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and

```
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
```

(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent

(such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

```
  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation.  If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.
```

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program> Copyright (C) <year> <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs. If your program is a subroutine library, you

```
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.51 lfs-bootscripts

lfs-bootscripts

3.52 libarchive

```
libarchive
--------------------------------------------------------------------
libarchive/COPYING
--------------------------------------------------------------------
The libarchive distribution as a whole is Copyright by Tim Kientzle
and is subject to the copyright notice reproduced at the bottom of
this file.

Each individual file in this distribution should have a clear
copyright/licensing statement at the beginning of the file.  If any do
not, please let me know and I will rectify it.  The following is
intended to summarize the copyright status of the individual files;
the actual statements in the files are controlling.

* Except as listed below, all C sources (including .c and .h files)
  and documentation files are subject to the copyright notice reproduced
  at the bottom of this file.

* The following source files are also subject in whole or in part to
  a 3-clause UC Regents copyright; please read the individual source
  files for details:
   libarchive/archive_entry.c
   libarchive/archive_read_support_filter_compress.c
   libarchive/archive_write_add_filter_compress.c
   libarchive/mtree.5

* The following source files are in the public domain:
   libarchive/archive_getdate.c

* The build files---including Makefiles, configure scripts,
  and auxiliary scripts used as part of the compile process---have
  widely varying licensing terms.  Please check individual files before
  distributing them to see if those restrictions apply to you.

I intend for all new source code to use the license below and hope over
time to replace code with other licenses with new implementations that
do use the license below.  The varying licensing of the build scripts
seems to be an unavoidable mess.


Copyright (c) 2003-2009 <author(s)>
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer
   in this position and unchanged.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR(S) ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
```

OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

3.53 libcap

```
libcap
-----------------------------------------------------------------
libcap/License
-----------------------------------------------------------------
Unless otherwise *explicitly* stated, the following text describes the
licensed conditions under which the contents of this libcap release
may be used and distributed:

-------------------------------------------------------------------------
Redistribution and use in source and binary forms of libcap, with
or without modification, are permitted provided that the following
conditions are met:

1. Redistributions of source code must retain any existing copyright
   notice, and this entire permission notice in its entirety,
   including the disclaimer of warranties.

2. Redistributions in binary form must reproduce all prior and current
   copyright notices, this list of conditions, and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.

3. The name of any author may not be used to endorse or promote
   products derived from this software without their specific prior
   written permission.

ALTERNATIVELY, this product may be distributed under the terms of the
GNU General Public License (v2.0 - see below), in which case the
provisions of the GNU GPL are required INSTEAD OF the above
restrictions.  (This clause is necessary due to a potential conflict
between the GNU GPL and the restrictions contained in a BSD-style
copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
-------------------------------------------------------------------------

-------------------------
Full text of gpl-2.0.txt:
-------------------------

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
```

Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users. This General Public License applies to most of the Free Software Foundation's software and to any other program whose authors commit to using it. (Some other Free Software Foundation software is covered by the GNU Lesser General Public License instead.) You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below,

refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are

prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
libcap/pam_cap/License
----------------------------------------------------------------------
Unless otherwise *explicitly* stated the following text describes the
licensed conditions under which the contents of this module release
may be distributed:

------------------------------------------------------------------------
Redistribution and use in source and binary forms of this module, with
or without modification, are permitted provided that the following
conditions are met:

1. Redistributions of source code must retain any existing copyright
   notice, and this entire permission notice in its entirety,
   including the disclaimer of warranties.

2. Redistributions in binary form must reproduce all prior and current
   copyright notices, this list of conditions, and the following
   disclaimer in the documentation and/or other materials provided
   with the distribution.
```

```
3. The name of any author may not be used to endorse or promote
   products derived from this software without their specific prior
   written permission.

ALTERNATIVELY, this product may be distributed under the terms of the
GNU Library General Public License, in which case the provisions of
the GNU LGPL are required INSTEAD OF the above restrictions.  (This
clause is necessary due to a potential conflict between the GNU LGPL
and the restrictions contained in a BSD-style copyright.)

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR(S) BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
--------------------------------------------------------------------------
```

3.54 libftdi1

```
libftdi1
----------------------------------------------------------------------
libftdi1/COPYING-CMAKE-SCRIPTS
----------------------------------------------------------------------
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
----------------------------------------------------------------------
libftdi1/COPYING.GPL
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.
```

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

```
You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
```

machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you

may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES

PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may

```
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
-----------------------------------------------------------------
libftdi1/LICENSE
-----------------------------------------------------------------
The C library "libftdi1" is distributed under the
GNU Library General Public License version 2.

A copy of the GNU Library General Public License (LGPL) is included
in this distribution, in the file COPYING.LIB.

------------------------------------------------------------------------

The C++ wrapper "ftdipp1" is distributed under the GNU General
Public License version 2 (with a special exception described below).

A copy of the GNU General Public License (GPL) is included
in this distribution, in the file COPYING.GPL.

As a special exception, if other files instantiate templates or use macros
or inline functions from this file, or you compile this file and link it
with other works to produce a work based on this file, this file
does not by itself cause the resulting work to be covered
by the GNU General Public License.

However the source code for this file must still be made available
in accordance with section (3) of the GNU General Public License.

This exception does not invalidate any other reasons why a work based
on this file might be covered by the GNU General Public License.
-----------------------------------------------------------------
libftdi1/COPYING.LIB
-----------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]
```

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Library General Public License, applies to some specially designated Free Software Foundation software, and to any other libraries whose authors decide to use it. You can use it for your libraries, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library, or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link a program with the library, you must provide complete object files to the recipients so that they can relink them with the library, after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

Our method of protecting your rights has two steps: (1) copyright the library, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the library.

Also, for each distributor's protection, we want to make certain that everyone understands that there is no warranty for this free library. If the library is modified by someone else and passed on, we want its recipients to know that what they have is not the original version, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that companies distributing free software will individually obtain patent licenses, thus in effect transforming the program into proprietary software. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

Most GNU software, including some libraries, is covered by the ordinary GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation

and installation of the library.

  Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

  You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

    (For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the

entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be

linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

    b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

    c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

    d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally

distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot

distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Library General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

3.55 libpcap

```
libpcap
----------------------------------------------------------------
libpcap/LICENSE
----------------------------------------------------------------
License: BSD

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

  1. Redistributions of source code must retain the above copyright
     notice, this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in
     the documentation and/or other materials provided with the
     distribution.
  3. The names of the authors may not be used to endorse or promote
     products derived from this software without specific prior
     written permission.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
```

3.56 libtool

```
libtool
--------------------------------------------------------------------
libtool/libltdl/COPYING.LIB
--------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.
```

To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

The precise terms and conditions for copying, distribution and

modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

```
    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License.  (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.)  Do not make any other change in
these notices.


  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
```

the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference

directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work

based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice
```

That's all there is to it!

---

libtool/COPYING

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

```
 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.
```

Preamble

```
  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
```

language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

```
In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
```

the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free

Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

  10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

```
    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
```

3.57 libusb

```
libusb
------------------------------------------------------------------
libusb/COPYING
------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.
```

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.

  Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and

modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

                  GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of

the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference

directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work

based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing

to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the library, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice
```

That's all there is to it!

3.58 libuv

```
libuv
----------------------------------------------------------------------
libuv/LICENSE-docs
----------------------------------------------------------------------
Attribution 4.0 International

=======================================================================

Creative Commons Corporation ("Creative Commons") is not a law firm and
does not provide legal services or legal advice. Distribution of
Creative Commons public licenses does not create a lawyer-client or
other relationship. Creative Commons makes its licenses and related
information available on an "as-is" basis. Creative Commons gives no
warranties regarding its licenses, any material licensed under their
terms and conditions, or any related information. Creative Commons
disclaims all liability for damages resulting from their use to the
fullest extent possible.

Using Creative Commons Public Licenses

Creative Commons public licenses provide a standard set of terms and
conditions that creators and other rights holders may use to share
original works of authorship and other material subject to copyright
and certain other rights specified in the public license below. The
following considerations are for informational purposes only, are not
exhaustive, and do not form part of our licenses.

     Considerations for licensors: Our public licenses are
     intended for use by those authorized to give the public
     permission to use material in ways otherwise restricted by
     copyright and certain other rights. Our licenses are
     irrevocable. Licensors should read and understand the terms
     and conditions of the license they choose before applying it.
     Licensors should also secure all rights necessary before
     applying our licenses so that the public can reuse the
     material as expected. Licensors should clearly mark any
     material not subject to the license. This includes other CC-
     licensed material, or material used under an exception or
     limitation to copyright. More considerations for licensors:
        wiki.creativecommons.org/Considerations_for_licensors

     Considerations for the public: By using one of our public
     licenses, a licensor grants the public permission to use the
     licensed material under specified terms and conditions. If
     the licensor's permission is not necessary for any reason--for
     example, because of any applicable exception or limitation to
     copyright--then that use is not regulated by the license. Our
     licenses grant only permissions under copyright and certain
     other rights that a licensor has authority to grant. Use of
     the licensed material may still be restricted for other
     reasons, including because others have copyright or other
     rights in the material. A licensor may make special requests,
     such as asking that all changes be marked or described.
     Although not required by our licenses, you are encouraged to
     respect those requests where reasonable. More_considerations
```

```
     for the public:
        wiki.creativecommons.org/Considerations_for_licensees

=======================================================================

Creative Commons Attribution 4.0 International Public License

By exercising the Licensed Rights (defined below), You accept and agree
to be bound by the terms and conditions of this Creative Commons
Attribution 4.0 International Public License ("Public License"). To the
extent this Public License may be interpreted as a contract, You are
granted the Licensed Rights in consideration of Your acceptance of
these terms and conditions, and the Licensor grants You such rights in
consideration of benefits the Licensor receives from making the
Licensed Material available under these terms and conditions.


Section 1 -- Definitions.

  a. Adapted Material means material subject to Copyright and Similar
     Rights that is derived from or based upon the Licensed Material
     and in which the Licensed Material is translated, altered,
     arranged, transformed, or otherwise modified in a manner requiring
     permission under the Copyright and Similar Rights held by the
     Licensor. For purposes of this Public License, where the Licensed
     Material is a musical work, performance, or sound recording,
     Adapted Material is always produced where the Licensed Material is
     synched in timed relation with a moving image.

  b. Adapter's License means the license You apply to Your Copyright
     and Similar Rights in Your contributions to Adapted Material in
     accordance with the terms and conditions of this Public License.

  c. Copyright and Similar Rights means copyright and/or similar rights
     closely related to copyright including, without limitation,
     performance, broadcast, sound recording, and Sui Generis Database
     Rights, without regard to how the rights are labeled or
     categorized. For purposes of this Public License, the rights
     specified in Section 2(b)(1)-(2) are not Copyright and Similar
     Rights.

  d. Effective Technological Measures means those measures that, in the
     absence of proper authority, may not be circumvented under laws
     fulfilling obligations under Article 11 of the WIPO Copyright
     Treaty adopted on December 20, 1996, and/or similar international
     agreements.

  e. Exceptions and Limitations means fair use, fair dealing, and/or
     any other exception or limitation to Copyright and Similar Rights
     that applies to Your use of the Licensed Material.

  f. Licensed Material means the artistic or literary work, database,
     or other material to which the Licensor applied this Public
     License.

  g. Licensed Rights means the rights granted to You subject to the
     terms and conditions of this Public License, which are limited to
     all Copyright and Similar Rights that apply to Your use of the
     Licensed Material and that the Licensor has authority to license.
```

h. Licensor means the individual(s) or entity(ies) granting rights under this Public License.

i. Share means to provide material to the public by any means or process that requires permission under the Licensed Rights, such as reproduction, public display, public performance, distribution, dissemination, communication, or importation, and to make material available to the public including in ways that members of the public may access the material from a place and at a time individually chosen by them.

j. Sui Generis Database Rights means rights other than copyright resulting from Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases, as amended and/or succeeded, as well as other essentially equivalent rights anywhere in the world.

k. You means the individual or entity exercising the Licensed Rights under this Public License. Your has a corresponding meaning.

Section 2 -- Scope.

a. License grant.

1. Subject to the terms and conditions of this Public License, the Licensor hereby grants You a worldwide, royalty-free, non-sublicensable, non-exclusive, irrevocable license to exercise the Licensed Rights in the Licensed Material to:

a. reproduce and Share the Licensed Material, in whole or in part; and

b. produce, reproduce, and Share Adapted Material.

2. Exceptions and Limitations. For the avoidance of doubt, where Exceptions and Limitations apply to Your use, this Public License does not apply, and You do not need to comply with its terms and conditions.

3. Term. The term of this Public License is specified in Section 6(a).

4. Media and formats; technical modifications allowed. The Licensor authorizes You to exercise the Licensed Rights in all media and formats whether now known or hereafter created, and to make technical modifications necessary to do so. The Licensor waives and/or agrees not to assert any right or authority to forbid You from making technical modifications necessary to exercise the Licensed Rights, including technical modifications necessary to circumvent Effective Technological Measures. For purposes of this Public License, simply making modifications authorized by this Section 2(a) (4) never produces Adapted Material.

5. Downstream recipients.

a. Offer from the Licensor -- Licensed Material. Every

recipient of the Licensed Material automatically receives an offer from the Licensor to exercise the Licensed Rights under the terms and conditions of this Public License.

b. No downstream restrictions. You may not offer or impose any additional or different terms or conditions on, or apply any Effective Technological Measures to, the Licensed Material if doing so restricts exercise of the Licensed Rights by any recipient of the Licensed Material.

6. No endorsement. Nothing in this Public License constitutes or may be construed as permission to assert or imply that You are, or that Your use of the Licensed Material is, connected with, or sponsored, endorsed, or granted official status by, the Licensor or others designated to receive attribution as provided in Section 3(a)(1)(A)(i).

b. Other rights.

1. Moral rights, such as the right of integrity, are not licensed under this Public License, nor are publicity, privacy, and/or other similar personality rights; however, to the extent possible, the Licensor waives and/or agrees not to assert any such rights held by the Licensor to the limited extent necessary to allow You to exercise the Licensed Rights, but not otherwise.

2. Patent and trademark rights are not licensed under this Public License.

3. To the extent possible, the Licensor waives any right to collect royalties from You for the exercise of the Licensed Rights, whether directly or through a collecting society under any voluntary or waivable statutory or compulsory licensing scheme. In all other cases the Licensor expressly reserves any right to collect such royalties.

Section 3 -- License Conditions.

Your exercise of the Licensed Rights is expressly made subject to the following conditions.

a. Attribution.

1. If You Share the Licensed Material (including in modified form), You must:

a. retain the following if it is supplied by the Licensor with the Licensed Material:

i. identification of the creator(s) of the Licensed Material and any others designated to receive attribution, in any reasonable manner requested by the Licensor (including by pseudonym if designated);

ii. a copyright notice;

iii. a notice that refers to this Public License;

iv. a notice that refers to the disclaimer of warranties;

v. a URI or hyperlink to the Licensed Material to the extent reasonably practicable;

b. indicate if You modified the Licensed Material and retain an indication of any previous modifications; and

c. indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.

2. You may satisfy the conditions in Section 3(a)(1) in any reasonable manner based on the medium, means, and context in which You Share the Licensed Material. For example, it may be reasonable to satisfy the conditions by providing a URI or hyperlink to a resource that includes the required information.

3. If requested by the Licensor, You must remove any of the information required by Section 3(a)(1)(A) to the extent reasonably practicable.

4. If You Share Adapted Material You produce, the Adapter's License You apply must not prevent recipients of the Adapted Material from complying with this Public License.

Section 4 -- Sui Generis Database Rights.

Where the Licensed Rights include Sui Generis Database Rights that apply to Your use of the Licensed Material:

a. for the avoidance of doubt, Section 2(a)(1) grants You the right to extract, reuse, reproduce, and Share all or a substantial portion of the contents of the database;

b. if You include all or a substantial portion of the database contents in a database in which You have Sui Generis Database Rights, then the database in which You have Sui Generis Database Rights (but not its individual contents) is Adapted Material; and

c. You must comply with the conditions in Section 3(a) if You Share all or a substantial portion of the contents of the database.

For the avoidance of doubt, this Section 4 supplements and does not replace Your obligations under this Public License where the Licensed Rights include other Copyright and Similar Rights.

Section 5 -- Disclaimer of Warranties and Limitation of Liability.

a. UNLESS OTHERWISE SEPARATELY UNDERTAKEN BY THE LICENSOR, TO THE EXTENT POSSIBLE, THE LICENSOR OFFERS THE LICENSED MATERIAL AS-IS

AND AS-AVAILABLE, AND MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE LICENSED MATERIAL, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHER. THIS INCLUDES, WITHOUT LIMITATION, WARRANTIES OF TITLE, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, ABSENCE OF LATENT OR OTHER DEFECTS, ACCURACY, OR THE PRESENCE OR ABSENCE OF ERRORS, WHETHER OR NOT KNOWN OR DISCOVERABLE. WHERE DISCLAIMERS OF WARRANTIES ARE NOT ALLOWED IN FULL OR IN PART, THIS DISCLAIMER MAY NOT APPLY TO YOU.

b. TO THE EXTENT POSSIBLE, IN NO EVENT WILL THE LICENSOR BE LIABLE TO YOU ON ANY LEGAL THEORY (INCLUDING, WITHOUT LIMITATION, NEGLIGENCE) OR OTHERWISE FOR ANY DIRECT, SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE, EXEMPLARY, OR OTHER LOSSES, COSTS, EXPENSES, OR DAMAGES ARISING OUT OF THIS PUBLIC LICENSE OR USE OF THE LICENSED MATERIAL, EVEN IF THE LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES, COSTS, EXPENSES, OR DAMAGES. WHERE A LIMITATION OF LIABILITY IS NOT ALLOWED IN FULL OR IN PART, THIS LIMITATION MAY NOT APPLY TO YOU.

c. The disclaimer of warranties and limitation of liability provided above shall be interpreted in a manner that, to the extent possible, most closely approximates an absolute disclaimer and waiver of all liability.

Section 6 -- Term and Termination.

a. This Public License applies for the term of the Copyright and Similar Rights licensed here. However, if You fail to comply with this Public License, then Your rights under this Public License terminate automatically.

b. Where Your right to use the Licensed Material has terminated under Section 6(a), it reinstates:

   1. automatically as of the date the violation is cured, provided it is cured within 30 days of Your discovery of the violation; or

   2. upon express reinstatement by the Licensor.

   For the avoidance of doubt, this Section 6(b) does not affect any right the Licensor may have to seek remedies for Your violations of this Public License.

c. For the avoidance of doubt, the Licensor may also offer the Licensed Material under separate terms or conditions or stop distributing the Licensed Material at any time; however, doing so will not terminate this Public License.

d. Sections 1, 5, 6, 7, and 8 survive termination of this Public License.

Section 7 -- Other Terms and Conditions.

a. The Licensor shall not be bound by any additional or different terms or conditions communicated by You unless expressly agreed.

  b. Any arrangements, understandings, or agreements regarding the
     Licensed Material not stated herein are separate from and
     independent of the terms and conditions of this Public License.

Section 8 -- Interpretation.

  a. For the avoidance of doubt, this Public License does not, and
     shall not be interpreted to, reduce, limit, restrict, or impose
     conditions on any use of the Licensed Material that could lawfully
     be made without permission under this Public License.

  b. To the extent possible, if any provision of this Public License is
     deemed unenforceable, it shall be automatically reformed to the
     minimum extent necessary to make it enforceable. If the provision
     cannot be reformed, it shall be severed from this Public License
     without affecting the enforceability of the remaining terms and
     conditions.

  c. No term or condition of this Public License will be waived and no
     failure to comply consented to unless expressly agreed to by the
     Licensor.

  d. Nothing in this Public License constitutes or may be interpreted
     as a limitation upon, or waiver of, any privileges and immunities
     that apply to the Licensor or You, including from the legal
     processes of any jurisdiction or authority.

===

Creative Commons is not a party to its public
licenses. Notwithstanding, Creative Commons may elect to apply one of
its public licenses to material it publishes and in those instances
will be considered the “Licensor”. The text of the Creative Commons
public licenses is dedicated to the public domain under the CC0 Public
Domain Dedication. Except for the limited purpose of indicating that
material is shared under a Creative Commons public license or as
otherwise permitted by the Creative Commons policies published at
creativecommons.org/policies, Creative Commons does not authorize the
use of the trademark "Creative Commons" or any other trademark or logo
of Creative Commons without its prior written consent including,
without limitation, in connection with any unauthorized modifications
to any of its public licenses or any other arrangements,
understandings, or agreements concerning use of licensed material. For
the avoidance of doubt, this paragraph does not form part of the
public licenses.

Creative Commons may be contacted at creativecommons.org.

----
libuv/LICENSE
----
libuv is licensed for use as follows:

====
Copyright (c) 2015-present libuv project contributors.

Permission is hereby granted, free of charge, to any person obtaining a copy

```
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.
====

This license applies to parts of libuv originating from the
https://github.com/joyent/libuv repository:

====

Copyright Joyent, Inc. and other Node contributors. All rights reserved.
Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.

====

This license applies to all parts of libuv that are not externally
maintained libraries.

The externally maintained libraries used by libuv are:

  - tree.h (from FreeBSD), copyright Niels Provos. Two clause BSD license.

  - inet_pton and inet_ntop implementations, contained in src/inet.c, are
    copyright the Internet Systems Consortium, Inc., and licensed under the ISC
    license.

  - stdint-msvc2008.h (from msinttypes), copyright Alexander Chemeris. Three
    clause BSD license.

  - pthread-fixes.c, copyright Google Inc. and Sony Mobile Communications AB.
```

```
    Three clause BSD license.

  - android-ifaddrs.h, android-ifaddrs.c, copyright Berkeley Software Design
    Inc, Kenneth MacKay and Emergya (Cloud4all, FP7/2007-2013, grant agreement
    n° 289016). Three clause BSD license.
--------------------------------------------------------------------
libuv/samples/socks5-proxy/LICENSE
--------------------------------------------------------------------
Files: *
========

Copyright StrongLoop, Inc. All rights reserved.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to
deal in the Software without restriction, including without limitation the
rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
sell copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING
FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS
IN THE SOFTWARE.


Files: getopt.c
===============

Copyright (c) 1987, 1993, 1994
The Regents of the University of California.  All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. Neither the name of the University nor the names of its contributors
   may be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
```

```
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
```

3.59 linux

```
linux
-----------------------------------------------------------------
linux/sound/core/oss/copy.c
-----------------------------------------------------------------
/*
 *  Linear conversion Plug-In
 *  Copyright (c) 2000 by Abramo Bagnara <abramo@alsa-project.org>
 *
 *
 *   This library is free software; you can redistribute it and/or modify
 *   it under the terms of the GNU Library General Public License as
 *   published by the Free Software Foundation; either version 2 of
 *   the License, or (at your option) any later version.
 *
 *   This program is distributed in the hope that it will be useful,
 *   but WITHOUT ANY WARRANTY; without even the implied warranty of
 *   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 *   GNU Library General Public License for more details.
 *
 *   You should have received a copy of the GNU Library General Public
 *   License along with this library; if not, write to the Free Software
 *   Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA  02111-1307 USA
 *
 */

#include <linux/time.h>
#include <sound/core.h>
#include <sound/pcm.h>
#include "pcm_plugin.h"

static snd_pcm_sframes_t copy_transfer(struct snd_pcm_plugin *plugin,
                               const struct snd_pcm_plugin_channel *src_channels,
                               struct snd_pcm_plugin_channel *dst_channels,
                               snd_pcm_uframes_t frames)
{
        unsigned int channel;
        unsigned int nchannels;

        if (snd_BUG_ON(!plugin || !src_channels || !dst_channels))
                return -ENXIO;
        if (frames == 0)
                return 0;
        nchannels = plugin->src_format.channels;
        for (channel = 0; channel < nchannels; channel++) {
                if (snd_BUG_ON(src_channels->area.first % 8 ||
                               src_channels->area.step % 8))
                        return -ENXIO;
                if (snd_BUG_ON(dst_channels->area.first % 8 ||
                               dst_channels->area.step % 8))
                        return -ENXIO;
                if (!src_channels->enabled) {
                        if (dst_channels->wanted)
                                snd_pcm_area_silence(&dst_channels->area, 0, frames, plugin->dst_format.format)
                        dst_channels->enabled = 0;
                        continue;
```

```
                }
                dst_channels->enabled = 1;
                snd_pcm_area_copy(&src_channels->area, 0, &dst_channels->area, 0, frames, plugin->src_
                src_channels++;
                dst_channels++;
        }
        return frames;
}

int snd_pcm_plugin_build_copy(struct snd_pcm_substream *plug,
                              struct snd_pcm_plugin_format *src_format,
                              struct snd_pcm_plugin_format *dst_format,
                              struct snd_pcm_plugin **r_plugin)
{
        int err;
        struct snd_pcm_plugin *plugin;
        int width;

        if (snd_BUG_ON(!r_plugin))
                return -ENXIO;
        *r_plugin = NULL;

        if (snd_BUG_ON(src_format->format != dst_format->format))
                return -ENXIO;
        if (snd_BUG_ON(src_format->rate != dst_format->rate))
                return -ENXIO;
        if (snd_BUG_ON(src_format->channels != dst_format->channels))
                return -ENXIO;

        width = snd_pcm_format_physical_width(src_format->format);
        if (snd_BUG_ON(width <= 0))
                return -ENXIO;

        err = snd_pcm_plugin_build(plug, "copy", src_format, dst_format,
                                   0, &plugin);
        if (err < 0)
                return err;
        plugin->transfer = copy_transfer;
        *r_plugin = plugin;
        return 0;
}
```

---

linux/drivers/net/wireless/marvell/libertas/LICENSE

```
  Copyright (c) 2003-2006, Marvell International Ltd.
  All Rights Reserved

  This program is free software; you can redistribute it and/or modify it
  under the terms of version 2 of the GNU General Public License as
  published by the Free Software Foundation.

  This program is distributed in the hope that it will be useful, but WITHOUT
  ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or
  FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License for
  more details.

  You should have received a copy of the GNU General Public License along with
  this program; if not, write to the Free Software Foundation, Inc., 59
  Temple Place - Suite 330, Boston, MA  02111-1307, USA.
```

```
----------------------------------------------------------------
linux/drivers/net/LICENSE.SRC
----------------------------------------------------------------
Code in this directory written at the IDA Supercomputing Research Center
carries the following copyright and license.

    Copyright 1993 United States Government as represented by the
    Director, National Security Agency.  This software may be used
    and distributed according to the terms of the GNU General Public License,
    incorporated herein by reference.

    In addition to the disclaimers in the GPL, SRC expressly disclaims any
    and all warranties, expressed or implied, concerning the enclosed software.
    This software was developed at SRC for use in internal research, and the
    intent in sharing this software is to promote the productive interchange
    of ideas throughout the research community.   All software is furnished
    on an "as-is" basis.  No further updates to this software should be
    expected.  Although updates may occur, no commitment exists.
----------------------------------------------------------------
linux/drivers/staging/rtl8192u/copying
----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.
```

```
  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.
```

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for

making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING

OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) year  name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
This is free software, and you are welcome to redistribute it
under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program
`Gnomovision' (which makes passes at compilers) written by James Hacker.

```
  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------
linux/drivers/staging/media/atomisp/pci/atomisp2/css2400/isp/kernels/copy_output/
----------------------------------------------------------------
----------------------------------------------------------------
linux/drivers/staging/media/atomisp/pci/atomisp2/css2400/isp/kernels/copy_output/copy_output_1.0/
----------------------------------------------------------------
----------------------------------------------------------------
linux/drivers/staging/media/atomisp/pci/atomisp2/css2400/isp/kernels/copy_output/copy_output_1.0/ia_css_copy_ou
----------------------------------------------------------------
/*
 * Support for Intel Camera Imaging ISP subsystem.
 * Copyright (c) 2015, Intel Corporation.
 *
 * This program is free software; you can redistribute it and/or modify it
 * under the terms and conditions of the GNU General Public License,
 * version 2, as published by the Free Software Foundation.
 *
 * This program is distributed in the hope it will be useful, but WITHOUT
 * ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or
 * FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License for
 * more details.
 */

#ifndef __IA_CSS_COPY_OUTPUT_HOST_H
#define __IA_CSS_COPY_OUTPUT_HOST_H

#include "type_support.h"
#include "ia_css_binary.h"

#include "ia_css_copy_output_param.h"

void
ia_css_copy_output_config(
        struct sh_css_isp_copy_output_isp_config      *to,
        const struct ia_css_copy_output_configuration *from,
        unsigned size);

void
ia_css_copy_output_configure(
        const struct ia_css_binary     *binary,
        bool enable);

#endif /* __IA_CSS_COPY_OUTPUT_HOST_H */
----------------------------------------------------------------
linux/drivers/staging/media/atomisp/pci/atomisp2/css2400/isp/kernels/copy_output/copy_output_1.0/ia_css_copy_ou
----------------------------------------------------------------
/*
 * Support for Intel Camera Imaging ISP subsystem.
 * Copyright (c) 2015, Intel Corporation.
 *
 * This program is free software; you can redistribute it and/or modify it
```

```
 * under the terms and conditions of the GNU General Public License,
 * version 2, as published by the Free Software Foundation.
 *
 * This program is distributed in the hope it will be useful, but WITHOUT
 * ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or
 * FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License for
 * more details.
 */

#ifndef __IA_CSS_COPY_PARAM_H
#define __IA_CSS_COPY_PARAM_H

struct ia_css_copy_output_configuration {
        bool enable;
};

struct sh_css_isp_copy_output_isp_config {
        uint32_t enable;
};

#endif /* __IA_CSS_COPY_PARAM_H */
---------------------------------------------------------------------
linux/drivers/staging/media/atomisp/pci/atomisp2/css2400/isp/kernels/copy_output/copy_output_1.0/ia_cs
---------------------------------------------------------------------
/*
 * Support for Intel Camera Imaging ISP subsystem.
 * Copyright (c) 2015, Intel Corporation.
 *
 * This program is free software; you can redistribute it and/or modify it
 * under the terms and conditions of the GNU General Public License,
 * version 2, as published by the Free Software Foundation.
 *
 * This program is distributed in the hope it will be useful, but WITHOUT
 * ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or
 * FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License for
 * more details.
 */

#include "ia_css_copy_output.host.h"
#include "ia_css_binary.h"
#include "type_support.h"
#define IA_CSS_INCLUDE_CONFIGURATIONS
#include "ia_css_isp_configs.h"
#include "isp.h"

static const struct ia_css_copy_output_configuration default_config = {
        .enable = false,
};

void
ia_css_copy_output_config(
        struct sh_css_isp_copy_output_isp_config      *to,
        const struct ia_css_copy_output_configuration *from,
        unsigned size)
{
        (void)size;
        to->enable = from->enable;
}
```

```
void
ia_css_copy_output_configure(
        const struct ia_css_binary     *binary,
        bool enable)
{
        struct ia_css_copy_output_configuration config = default_config;

        config.enable = enable;

        ia_css_configure_copy_output(binary, &config);
}
```

---

linux/drivers/staging/rtl8192e/license

```
"This software program is licensed subject to the GNU General Public License
(GPL). Version 2, June 1991, available at
<http:

GNU General Public License

Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place - Suite 330, Boston, MA  02111-1307, USA

Everyone is permitted to copy and distribute verbatim copies of this license
document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your freedom to
share and change it. By contrast, the GNU General Public License is intended
to guarantee your freedom to share and change free software--to make sure
the software is free for all its users. This General Public License applies
to most of the Free Software Foundation's software and to any other program
whose authors commit to using it. (Some other Free Software Foundation
software is covered by the GNU Library General Public License instead.) You
can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our
General Public Licenses are designed to make sure that you have the freedom
to distribute copies of free software (and charge for this service if you
wish), that you receive source code or can get it if you want it, that you
can change the software or use pieces of it in new free programs; and that
you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to
deny you these rights or to ask you to surrender the rights. These
restrictions translate to certain responsibilities for you if you distribute
copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or
for a fee, you must give the recipients all the rights that you have. You
must make sure that they, too, receive or can get the source code. And you
must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2)
```

```
offer you this license which gives you legal permission to copy, distribute
and/or modify the software.

Also, for each author's protection and ours, we want to make certain that
everyone understands that there is no warranty for this free software. If
the software is modified by someone else and passed on, we want its
recipients to know that what they have is not the original, so that any
problems introduced by others will not reflect on the original authors'
reputations.

Finally, any free program is threatened constantly by software patents. We
wish to avoid the danger that redistributors of a free program will
individually obtain patent licenses, in effect making the program
proprietary. To prevent this, we have made it clear that any patent must be
licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification
follow.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice
   placed by the copyright holder saying it may be distributed under the
   terms of this General Public License. The "Program", below, refers to any
   such program or work, and a "work based on the Program" means either the
   Program or any derivative work under copyright law: that is to say, a
   work containing the Program or a portion of it, either verbatim or with
   modifications and/or translated into another language. (Hereinafter,
   translation is included without limitation in the term "modification".)
   Each licensee is addressed as "you".

   Activities other than copying, distribution and modification are not
   covered by this License; they are outside its scope. The act of running
   the Program is not restricted, and the output from the Program is covered
   only if its contents constitute a work based on the Program (independent
   of having been made by running the Program). Whether that is true depends
   on what the Program does.

1. You may copy and distribute verbatim copies of the Program's source code
   as you receive it, in any medium, provided that you conspicuously and
   appropriately publish on each copy an appropriate copyright notice and
   disclaimer of warranty; keep intact all the notices that refer to this
   License and to the absence of any warranty; and give any other recipients
   of the Program a copy of this License along with the Program.

   You may charge a fee for the physical act of transferring a copy, and you
   may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Program or any portion of it,
   thus forming a work based on the Program, and copy and distribute such
   modifications or work under the terms of Section 1 above, provided that
   you also meet all of these conditions:

   * a) You must cause the modified files to carry prominent notices stating
        that you changed the files and the date of any change.

   * b) You must cause any work that you distribute or publish, that in
        whole or in part contains or is derived from the Program or any part
        thereof, to be licensed as a whole at no charge to all third parties
```

under the terms of this License.

* c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

* a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

* b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

* c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special

exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

   If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

   It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in

reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

one line to give the program's name and an idea of what it does.
Copyright (C) yyyy name of author

This program is free software; you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

You should have received a copy of the GNU General Public License along with this program; if not, write to the Free Software Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

Gnomovision version 69, Copyright (C) year name of author Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type 'show w'. This is free software, and you are welcome to redistribute it under certain conditions; type 'show c' for details.

The hypothetical commands 'show w' and 'show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than 'show w' and 'show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

Yoyodyne, Inc., hereby disclaims all copyright interest in the program 'Gnomovision' (which makes passes at compilers) written by James Hacker.

signature of Ty Coon, 1 April 1989
Ty Coon, President of Vice

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Library General Public License instead of this License.

```
----------------------------------------------------------------
linux/include/linux/license.h
----------------------------------------------------------------
#ifndef __LICENSE_H
#define __LICENSE_H

static inline int license_is_gpl_compatible(const char *license)
{
        return (strcmp(license, "GPL") == 0
                || strcmp(license, "GPL v2") == 0
                || strcmp(license, "GPL and additional rights") == 0
                || strcmp(license, "Dual BSD/GPL") == 0
                || strcmp(license, "Dual MIT/GPL") == 0
                || strcmp(license, "Dual MPL/GPL") == 0);
}

#endif
----------------------------------------------------------------
linux/COPYING
----------------------------------------------------------------

   NOTE! This copyright does *not* cover user programs that use kernel
 services by normal system calls - this is merely considered normal use
 of the kernel, and does *not* fall under the heading of "derived work".
 Also note that the GPL below is copyrighted by the Free Software
 Foundation, but the instance of code that it refers to (the Linux
 kernel) is copyrighted by me and others who actually wrote it.

 Also note that the only valid version of the GPL as far as the kernel
 is concerned is _this_ particular version of the license (ie v2, not
 v2.2 or v3.x or whatever), unless explicitly otherwise stated.

                        Linus Torvalds

----------------------------------------

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                       51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
```

this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate

copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections

```
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.


  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
```

infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and

of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 2 of the License, or
(at your option) any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this

when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.
----
linux/Documentation/networking/LICENSE.qla3xxx

Copyright (c) 2003-2006 QLogic Corporation
QLogic Linux Networking HBA Driver

This program includes a device driver for Linux 2.6 that may be
distributed with QLogic hardware specific firmware binary file.
You may modify and redistribute the device driver code under the
GNU General Public License as published by the Free Software
Foundation (version 2 or a later version).

You may redistribute the hardware specific firmware binary file
under the following terms:

        1. Redistribution of source code (only if applicable),
           must retain the above copyright notice, this list of
           conditions and the following disclaimer.

        2. Redistribution in binary form must reproduce the above
           copyright notice, this list of conditions and the
           following disclaimer in the documentation and/or other
           materials provided with the distribution.

        3. The name of QLogic Corporation may not be used to
           endorse or promote products derived from this software
           without specific prior written permission

REGARDLESS OF WHAT LICENSING MECHANISM IS USED OR APPLICABLE,
THIS PROGRAM IS PROVIDED BY QLOGIC CORPORATION "AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A

```
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHOR
BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED
TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON
ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

USER ACKNOWLEDGES AND AGREES THAT USE OF THIS PROGRAM WILL NOT
CREATE OR GIVE GROUNDS FOR A LICENSE BY IMPLICATION, ESTOPPEL, OR
OTHERWISE IN ANY INTELLECTUAL PROPERTY RIGHTS (PATENT, COPYRIGHT,
TRADE SECRET, MASK WORK, OR OTHER PROPRIETARY RIGHT) EMBODIED IN
ANY OTHER QLOGIC HARDWARE OR SOFTWARE EITHER SOLELY OR IN
COMBINATION WITH THIS PROGRAM.

----------------------------------------------------------------------
linux/Documentation/networking/LICENSE.qlge
----------------------------------------------------------------------
Copyright (c) 2003-2011 QLogic Corporation
QLogic Linux qlge NIC Driver

You may modify and redistribute the device driver code under the
GNU General Public License (a copy of which is attached hereto as
Exhibit A) published by the Free Software Foundation (version 2).


EXHIBIT A

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
```

These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

```
  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,
```

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.
----
linux/Documentation/networking/LICENSE.qlcnic

Copyright (c) 2009-2013 QLogic Corporation
QLogic Linux qlcnic NIC Driver

You may modify and redistribute the device driver code under the
GNU General Public License (a copy of which is attached hereto as
Exhibit A) published by the Free Software Foundation (version 2).

EXHIBIT A

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether

gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1

above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you

```
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all.  For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
```

any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

```
  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.
----------------------------------------------------------------------
linux/Documentation/scsi/LICENSE.FlashPoint
----------------------------------------------------------------------
                     FlashPoint Driver Developer's Kit
                                Version 1.0

                   Copyright 1995-1996 by Mylex Corporation
                           All Rights Reserved

This program is free software; you may redistribute and/or modify it under
the terms of either:

    a) the GNU General Public License as published by the Free Software
    Foundation; either version 2, or (at your option) any later version,

    or

    b) the "BSD-style License" included below.

This program is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY, without even the implied warranty of MERCHANTABILITY
or FITNESS FOR A PARTICULAR PURPOSE.  See either the GNU General Public
License or the BSD-style License below for more details.

You should have received a copy of the GNU General Public License along
with this program; if not, write to the Free Software Foundation, Inc.,
675 Mass Ave, Cambridge, MA 02139, USA.

The BSD-style License is as follows:

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

1. Redistributions of source code must retain this LICENSE.FlashPoint
   file, without modification, this list of conditions, and the following
   disclaimer.  The following copyright notice must appear immediately at
   the beginning of all source files:

        Copyright 1995-1996 by Mylex Corporation.  All Rights Reserved

        This file is available under both the GNU General Public License
        and a BSD-style copyright; see LICENSE.FlashPoint for details.

2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

3. The name of Mylex Corporation may not be used to endorse or promote
   products derived from this software without specific prior written
```

permission.

THIS SOFTWARE IS PROVIDED BY MYLEX CORP. ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN
NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER
CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.
---
linux/Documentation/scsi/LICENSE.qla2xxx

Copyright (c) 2003-2014 QLogic Corporation
QLogic Linux FC-FCoE Driver

This program includes a device driver for Linux 3.x.
You may modify and redistribute the device driver code under the
GNU General Public License (a copy of which is attached hereto as
Exhibit A) published by the Free Software Foundation (version 2).

EXHIBIT A

GNU GENERAL PUBLIC LICENSE
Version 2, June 1991

Copyright (C) 1989, 1991 Free Software Foundation, Inc.
51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

Preamble

The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.) You can apply it to
your programs, too.

When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

```
  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
```

of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer

```
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all.  For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.
```

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,

```
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.
----------------------------------------------------------------------
linux/Documentation/scsi/LICENSE.qla4xxx
----------------------------------------------------------------------
Copyright (c) 2003-2013 QLogic Corporation
QLogic Linux iSCSI Driver

This program includes a device driver for Linux 3.x.
You may modify and redistribute the device driver code under the
GNU General Public License (a copy of which is attached hereto as
Exhibit A) published by the Free Software Foundation (version 2).


EXHIBIT A

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
```

you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

```
    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
```

an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to

apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

```
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.
----------------------------------------------------------------
linux/arch/powerpc/lib/copy_32.S
----------------------------------------------------------------
/*
 * Memory copy functions for 32-bit PowerPC.
 *
 * Copyright (C) 1996-2005 Paul Mackerras.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 */
#include <asm/processor.h>
#include <asm/cache.h>
#include <asm/errno.h>
#include <asm/ppc_asm.h>
#include <asm/export.h>

#define COPY_16_BYTES           \
        lwz     r7,4(r4);       \
        lwz     r8,8(r4);       \
        lwz     r9,12(r4);      \
        lwzu    r10,16(r4);     \
        stw     r7,4(r6);       \
        stw     r8,8(r6);       \
        stw     r9,12(r6);      \
        stwu    r10,16(r6)

#define COPY_16_BYTES_WITHEX(n) \
8 ## n ## 0:                    \
        lwz     r7,4(r4);       \
8 ## n ## 1:                    \
        lwz     r8,8(r4);       \
8 ## n ## 2:                    \
        lwz     r9,12(r4);      \
8 ## n ## 3:                    \
        lwzu    r10,16(r4);     \
8 ## n ## 4:                    \
        stw     r7,4(r6);       \
8 ## n ## 5:                    \
        stw     r8,8(r6);       \
8 ## n ## 6:                    \
        stw     r9,12(r6);      \
8 ## n ## 7:                    \
        stwu    r10,16(r6)

#define COPY_16_BYTES_EXCODE(n)                 \
9 ## n ## 0:                                    \
        addi    r5,r5,-(16 * n);                \
        b       104f;                           \
```

```
9 ## n ## 1:                                    \
        addi    r5,r5,-(16 * n);                \
        b       105f;                           \
        EX_TABLE(8 ## n ## 0b,9 ## n ## 0b);    \
        EX_TABLE(8 ## n ## 1b,9 ## n ## 0b);    \
        EX_TABLE(8 ## n ## 2b,9 ## n ## 0b);    \
        EX_TABLE(8 ## n ## 3b,9 ## n ## 0b);    \
        EX_TABLE(8 ## n ## 4b,9 ## n ## 1b);    \
        EX_TABLE(8 ## n ## 5b,9 ## n ## 1b);    \
        EX_TABLE(8 ## n ## 6b,9 ## n ## 1b);    \
        EX_TABLE(8 ## n ## 7b,9 ## n ## 1b)

        .text
        .stabs  "arch/powerpc/lib/",N_SO,0,0,0f
        .stabs  "copy_32.S",N_SO,0,0,0f
0:

CACHELINE_BYTES = L1_CACHE_BYTES
LG_CACHELINE_BYTES = L1_CACHE_SHIFT
CACHELINE_MASK = (L1_CACHE_BYTES-1)

_GLOBAL(memset16)
        rlwinm. r0 ,r5, 31, 1, 31
        addi    r6, r3, -4
        beq-    2f
        rlwimi  r4 ,r4 ,16 ,0 ,15
        mtctr   r0
1:      stwu    r4, 4(r6)
        bdnz    1b
2:      andi.   r0, r5, 1
        beqlr
        sth     r4, 4(r6)
        blr
EXPORT_SYMBOL(memset16)

/*
 * Use dcbz on the complete cache lines in the destination
 * to set them to zero.  This requires that the destination
 * area is cacheable.  -- paulus
 *
 * During early init, cache might not be active yet, so dcbz cannot be used.
 * We therefore skip the optimised bloc that uses dcbz. This jump is
 * replaced by a nop once cache is active. This is done in machine_init()
 */
_GLOBAL(memset)
        cmplwi  0,r5,4
        blt     7f

        rlwimi  r4,r4,8,16,23
        rlwimi  r4,r4,16,0,15

        stw     r4,0(r3)
        beqlr
        andi.   r0,r3,3
        add     r5,r0,r5
        subf    r6,r0,r3
        cmplwi  0,r4,0
        /*
         * Skip optimised bloc until cache is enabled. Will be replaced
```

```
         * by 'bne' during boot to use normal procedure if r4 is not zero
         */
_GLOBAL(memset_nocache_branch)
        b       2f

        clrlwi  r7,r6,32-LG_CACHELINE_BYTES
        add     r8,r7,r5
        srwi    r9,r8,LG_CACHELINE_BYTES
        addic.  r9,r9,-1        /* total number of complete cachelines */
        ble     2f
        xori    r0,r7,CACHELINE_MASK & ~3
        srwi.   r0,r0,2
        beq     3f
        mtctr   r0
4:      stwu    r4,4(r6)
        bdnz    4b
3:      mtctr   r9
        li      r7,4
10:     dcbz    r7,r6
        addi    r6,r6,CACHELINE_BYTES
        bdnz    10b
        clrlwi  r5,r8,32-LG_CACHELINE_BYTES
        addi    r5,r5,4

2:      srwi    r0,r5,2
        mtctr   r0
        bdz     6f
1:      stwu    r4,4(r6)
        bdnz    1b
6:      andi.   r5,r5,3
        beqlr
        mtctr   r5
        addi    r6,r6,3
8:      stbu    r4,1(r6)
        bdnz    8b
        blr

7:      cmpwi   0,r5,0
        beqlr
        mtctr   r5
        addi    r6,r3,-1
9:      stbu    r4,1(r6)
        bdnz    9b
        blr
EXPORT_SYMBOL(memset)

/*
 * This version uses dcbz on the complete cache lines in the
 * destination area to reduce memory traffic.  This requires that
 * the destination area is cacheable.
 * We only use this version if the source and dest don't overlap.
 * -- paulus.
 *
 * During early init, cache might not be active yet, so dcbz cannot be used.
 * We therefore jump to generic_memcpy which doesn't use dcbz. This jump is
 * replaced by a nop once cache is active. This is done in machine_init()
 */
_GLOBAL(memmove)
        cmplw   0,r3,r4
```

```
        bgt     backwards_memcpy
        /* fall through */

_GLOBAL(memcpy)
        b       generic_memcpy
        add     r7,r3,r5                /* test if the src & dst overlap */
        add     r8,r4,r5
        cmplw   0,r4,r7
        cmplw   1,r3,r8
        crand   0,0,4                   /* cr0.lt &= cr1.lt */
        blt     generic_memcpy          /* if regions overlap */

        addi    r4,r4,-4
        addi    r6,r3,-4
        neg     r0,r3
        andi.   r0,r0,CACHELINE_MASK    /* # bytes to start of cache line */
        beq     58f

        cmplw   0,r5,r0                 /* is this more than total to do? */
        blt     63f                     /* if not much to do */
        andi.   r8,r0,3                 /* get it word-aligned first */
        subf    r5,r0,r5
        mtctr   r8
        beq+    61f
70:     lbz     r9,4(r4)                /* do some bytes */
        addi    r4,r4,1
        addi    r6,r6,1
        stb     r9,3(r6)
        bdnz    70b
61:     srwi.   r0,r0,2
        mtctr   r0
        beq     58f
72:     lwzu    r9,4(r4)                /* do some words */
        stwu    r9,4(r6)
        bdnz    72b

58:     srwi.   r0,r5,LG_CACHELINE_BYTES /* # complete cachelines */
        clrlwi  r5,r5,32-LG_CACHELINE_BYTES
        li      r11,4
        mtctr   r0
        beq     63f
53:
        dcbz    r11,r6
        COPY_16_BYTES
#if L1_CACHE_BYTES >= 32
        COPY_16_BYTES
#if L1_CACHE_BYTES >= 64
        COPY_16_BYTES
        COPY_16_BYTES
#if L1_CACHE_BYTES >= 128
        COPY_16_BYTES
        COPY_16_BYTES
        COPY_16_BYTES
        COPY_16_BYTES
#endif
#endif
#endif
        bdnz    53b
```

```
63:     srwi.   r0,r5,2
        mtctr   r0
        beq     64f
30:     lwzu    r0,4(r4)
        stwu    r0,4(r6)
        bdnz    30b

64:     andi.   r0,r5,3
        mtctr   r0
        beq+    65f
        addi    r4,r4,3
        addi    r6,r6,3
40:     lbzu    r0,1(r4)
        stbu    r0,1(r6)
        bdnz    40b
65:     blr
EXPORT_SYMBOL(memcpy)
EXPORT_SYMBOL(memmove)

generic_memcpy:
        srwi.   r7,r5,3
        addi    r6,r3,-4
        addi    r4,r4,-4
        beq     2f                      /* if less than 8 bytes to do */
        andi.   r0,r6,3                 /* get dest word aligned */
        mtctr   r7
        bne     5f
1:      lwz     r7,4(r4)
        lwzu    r8,8(r4)
        stw     r7,4(r6)
        stwu    r8,8(r6)
        bdnz    1b
        andi.   r5,r5,7
2:      cmplwi  0,r5,4
        blt     3f
        lwzu    r0,4(r4)
        addi    r5,r5,-4
        stwu    r0,4(r6)
3:      cmpwi   0,r5,0
        beqlr
        mtctr   r5
        addi    r4,r4,3
        addi    r6,r6,3
4:      lbzu    r0,1(r4)
        stbu    r0,1(r6)
        bdnz    4b
        blr
5:      subfic  r0,r0,4
        mtctr   r0
6:      lbz     r7,4(r4)
        addi    r4,r4,1
        stb     r7,4(r6)
        addi    r6,r6,1
        bdnz    6b
        subf    r5,r0,r5
        rlwinm. r7,r5,32-3,3,31
        beq     2b
        mtctr   r7
        b       1b
```

```
_GLOBAL(backwards_memcpy)
        rlwinm. r7,r5,32-3,3,31         /* r0 = r5 >> 3 */
        add     r6,r3,r5
        add     r4,r4,r5
        beq     2f
        andi.   r0,r6,3
        mtctr   r7
        bne     5f
1:      lwz     r7,-4(r4)
        lwzu    r8,-8(r4)
        stw     r7,-4(r6)
        stwu    r8,-8(r6)
        bdnz    1b
        andi.   r5,r5,7
2:      cmplwi  0,r5,4
        blt     3f
        lwzu    r0,-4(r4)
        subi    r5,r5,4
        stwu    r0,-4(r6)
3:      cmpwi   0,r5,0
        beqlr
        mtctr   r5
4:      lbzu    r0,-1(r4)
        stbu    r0,-1(r6)
        bdnz    4b
        blr
5:      mtctr   r0
6:      lbzu    r7,-1(r4)
        stbu    r7,-1(r6)
        bdnz    6b
        subf    r5,r0,r5
        rlwinm. r7,r5,32-3,3,31
        beq     2b
        mtctr   r7
        b       1b

_GLOBAL(__copy_tofrom_user)
        addi    r4,r4,-4
        addi    r6,r3,-4
        neg     r0,r3
        andi.   r0,r0,CACHELINE_MASK    /* # bytes to start of cache line */
        beq     58f

        cmplw   0,r5,r0                 /* is this more than total to do? */
        blt     63f                     /* if not much to do */
        andi.   r8,r0,3                 /* get it word-aligned first */
        mtctr   r8
        beq+    61f
70:     lbz     r9,4(r4)                /* do some bytes */
71:     stb     r9,4(r6)
        addi    r4,r4,1
        addi    r6,r6,1
        bdnz    70b
61:     subf    r5,r0,r5
        srwi.   r0,r0,2
        mtctr   r0
        beq     58f
72:     lwzu    r9,4(r4)                /* do some words */
```

```
73:     stwu    r9,4(r6)
        bdnz    72b

        EX_TABLE(70b,100f)
        EX_TABLE(71b,101f)
        EX_TABLE(72b,102f)
        EX_TABLE(73b,103f)

58:     srwi.   r0,r5,LG_CACHELINE_BYTES /* # complete cachelines */
        clrlwi  r5,r5,32-LG_CACHELINE_BYTES
        li      r11,4
        beq     63f

        /* Here we decide how far ahead to prefetch the source */
        li      r3,4
        cmpwi   r0,1
        li      r7,0
        ble     114f
        li      r7,1
#if MAX_COPY_PREFETCH > 1
        /* Heuristically, for large transfers we prefetch
           MAX_COPY_PREFETCH cachelines ahead.  For small transfers
           we prefetch 1 cacheline ahead. */
        cmpwi   r0,MAX_COPY_PREFETCH
        ble     112f
        li      r7,MAX_COPY_PREFETCH
112:    mtctr   r7
111:    dcbt    r3,r4
        addi    r3,r3,CACHELINE_BYTES
        bdnz    111b
#else
        dcbt    r3,r4
        addi    r3,r3,CACHELINE_BYTES
#endif /* MAX_COPY_PREFETCH > 1 */

114:    subf    r8,r7,r0
        mr      r0,r7
        mtctr   r8

53:     dcbt    r3,r4
54:     dcbz    r11,r6
        EX_TABLE(54b,105f)
/* the main body of the cacheline loop */
        COPY_16_BYTES_WITHEX(0)
#if L1_CACHE_BYTES >= 32
        COPY_16_BYTES_WITHEX(1)
#if L1_CACHE_BYTES >= 64
        COPY_16_BYTES_WITHEX(2)
        COPY_16_BYTES_WITHEX(3)
#if L1_CACHE_BYTES >= 128
        COPY_16_BYTES_WITHEX(4)
        COPY_16_BYTES_WITHEX(5)
        COPY_16_BYTES_WITHEX(6)
        COPY_16_BYTES_WITHEX(7)
#endif
#endif
#endif
        bdnz    53b
        cmpwi   r0,0
```

```
        li      r3,4
        li      r7,0
        bne     114b

63:     srwi.   r0,r5,2
        mtctr   r0
        beq     64f
30:     lwzu    r0,4(r4)
31:     stwu    r0,4(r6)
        bdnz    30b

64:     andi.   r0,r5,3
        mtctr   r0
        beq+    65f
40:     lbz     r0,4(r4)
41:     stb     r0,4(r6)
        addi    r4,r4,1
        addi    r6,r6,1
        bdnz    40b
65:     li      r3,0
        blr

/* read fault, initial single-byte copy */
100:    li      r9,0
        b       90f
/* write fault, initial single-byte copy */
101:    li      r9,1
90:     subf    r5,r8,r5
        li      r3,0
        b       99f
/* read fault, initial word copy */
102:    li      r9,0
        b       91f
/* write fault, initial word copy */
103:    li      r9,1
91:     li      r3,2
        b       99f

/*
 * this stuff handles faults in the cacheline loop and branches to either
 * 104f (if in read part) or 105f (if in write part), after updating r5
 */
        COPY_16_BYTES_EXCODE(0)
#if L1_CACHE_BYTES >= 32
        COPY_16_BYTES_EXCODE(1)
#if L1_CACHE_BYTES >= 64
        COPY_16_BYTES_EXCODE(2)
        COPY_16_BYTES_EXCODE(3)
#if L1_CACHE_BYTES >= 128
        COPY_16_BYTES_EXCODE(4)
        COPY_16_BYTES_EXCODE(5)
        COPY_16_BYTES_EXCODE(6)
        COPY_16_BYTES_EXCODE(7)
#endif
#endif
#endif

/* read fault in cacheline loop */
104:    li      r9,0
```

```
        b       92f
/* fault on dcbz (effectively a write fault) */
/* or write fault in cacheline loop */
105:    li      r9,1
92:     li      r3,LG_CACHELINE_BYTES
        mfctr   r8
        add     r0,r0,r8
        b       106f
/* read fault in final word loop */
108:    li      r9,0
        b       93f
/* write fault in final word loop */
109:    li      r9,1
93:     andi.   r5,r5,3
        li      r3,2
        b       99f
/* read fault in final byte loop */
110:    li      r9,0
        b       94f
/* write fault in final byte loop */
111:    li      r9,1
94:     li      r5,0
        li      r3,0
/*
 * At this stage the number of bytes not copied is
 * r5 + (ctr << r3), and r9 is 0 for read or 1 for write.
 */
99:     mfctr   r0
106:    slw     r3,r0,r3
        add.    r3,r3,r5
        beq     120f                    /* shouldn't happen */
        cmpwi   0,r9,0
        bne     120f
/* for a read fault, first try to continue the copy one byte at a time */
        mtctr   r3
130:    lbz     r0,4(r4)
131:    stb     r0,4(r6)
        addi    r4,r4,1
        addi    r6,r6,1
        bdnz    130b
/* then clear out the destination: r3 bytes starting at 4(r6) */
132:    mfctr   r3
120:    blr

        EX_TABLE(30b,108b)
        EX_TABLE(31b,109b)
        EX_TABLE(40b,110b)
        EX_TABLE(41b,111b)
        EX_TABLE(130b,132b)
        EX_TABLE(131b,120b)

EXPORT_SYMBOL(__copy_tofrom_user)
----------------------------------------------------------------
linux/arch/powerpc/lib/copypage_64.S
----------------------------------------------------------------
/*
 * Copyright (C) 2008 Mark Nelson, IBM Corp.
 *
 * This program is free software; you can redistribute it and/or
```

```
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 */
#include <asm/page.h>
#include <asm/processor.h>
#include <asm/ppc_asm.h>
#include <asm/asm-offsets.h>
#include <asm/export.h>

        .section        ".toc","aw"
PPC64_CACHES:
        .tc             ppc64_caches[TC],ppc64_caches
        .section        ".text"

_GLOBAL_TOC(copy_page)
BEGIN_FTR_SECTION
        lis     r5,PAGE_SIZE@h
FTR_SECTION_ELSE
        b       copypage_power7
ALT_FTR_SECTION_END_IFCLR(CPU_FTR_VMX_COPY)
        ori     r5,r5,PAGE_SIZE@l
BEGIN_FTR_SECTION
        ld      r10,PPC64_CACHES@toc(r2)
        lwz     r11,DCACHEL1LOGBLOCKSIZE(r10)   /* log2 of cache block size */
        lwz     r12,DCACHEL1BLOCKSIZE(r10)      /* get cache block size */
        li      r9,0
        srd     r8,r5,r11

        mtctr   r8
.Lsetup:
        dcbt    r9,r4
        dcbz    r9,r3
        add     r9,r9,r12
        bdnz    .Lsetup
END_FTR_SECTION_IFSET(CPU_FTR_CP_USE_DCBTZ)
        addi    r3,r3,-8
        srdi    r8,r5,7         /* page is copied in 128 byte strides */
        addi    r8,r8,-1        /* one stride copied outside loop */

        mtctr   r8

        ld      r5,0(r4)
        ld      r6,8(r4)
        ld      r7,16(r4)
        ldu     r8,24(r4)
1:      std     r5,8(r3)
        std     r6,16(r3)
        ld      r9,8(r4)
        ld      r10,16(r4)
        std     r7,24(r3)
        std     r8,32(r3)
        ld      r11,24(r4)
        ld      r12,32(r4)
        std     r9,40(r3)
        std     r10,48(r3)
        ld      r5,40(r4)
        ld      r6,48(r4)
        std     r11,56(r3)
```

```
        std     r12,64(r3)
        ld      r7,56(r4)
        ld      r8,64(r4)
        std     r5,72(r3)
        std     r6,80(r3)
        ld      r9,72(r4)
        ld      r10,80(r4)
        std     r7,88(r3)
        std     r8,96(r3)
        ld      r11,88(r4)
        ld      r12,96(r4)
        std     r9,104(r3)
        std     r10,112(r3)
        ld      r5,104(r4)
        ld      r6,112(r4)
        std     r11,120(r3)
        stdu    r12,128(r3)
        ld      r7,120(r4)
        ldu     r8,128(r4)
        bdnz    1b

        std     r5,8(r3)
        std     r6,16(r3)
        ld      r9,8(r4)
        ld      r10,16(r4)
        std     r7,24(r3)
        std     r8,32(r3)
        ld      r11,24(r4)
        ld      r12,32(r4)
        std     r9,40(r3)
        std     r10,48(r3)
        ld      r5,40(r4)
        ld      r6,48(r4)
        std     r11,56(r3)
        std     r12,64(r3)
        ld      r7,56(r4)
        ld      r8,64(r4)
        std     r5,72(r3)
        std     r6,80(r3)
        ld      r9,72(r4)
        ld      r10,80(r4)
        std     r7,88(r3)
        std     r8,96(r3)
        ld      r11,88(r4)
        ld      r12,96(r4)
        std     r9,104(r3)
        std     r10,112(r3)
        std     r11,120(r3)
        std     r12,128(r3)
        blr
EXPORT_SYMBOL(copy_page)
----------------------------------------------------------------------
linux/arch/powerpc/lib/copyuser_64.S
----------------------------------------------------------------------
/*
 * Copyright (C) 2002 Paul Mackerras, IBM Corp.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
```

```
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 */
#include <asm/processor.h>
#include <asm/ppc_asm.h>
#include <asm/export.h>

#ifdef __BIG_ENDIAN__
#define sLd sld         /* Shift towards low-numbered address. */
#define sHd srd         /* Shift towards high-numbered address. */
#else
#define sLd srd         /* Shift towards low-numbered address. */
#define sHd sld         /* Shift towards high-numbered address. */
#endif

        .align  7
_GLOBAL_TOC(__copy_tofrom_user)
BEGIN_FTR_SECTION
        nop
FTR_SECTION_ELSE
        b       __copy_tofrom_user_power7
ALT_FTR_SECTION_END_IFCLR(CPU_FTR_VMX_COPY)
_GLOBAL(__copy_tofrom_user_base)
        /* first check for a whole page copy on a page boundary */
        cmpldi  cr1,r5,16
        cmpdi   cr6,r5,4096
        or      r0,r3,r4
        neg     r6,r3           /* LS 3 bits = # bytes to 8-byte dest bdry */
        andi.   r0,r0,4095
        std     r3,-24(r1)
        crand   cr0*4+2,cr0*4+2,cr6*4+2
        std     r4,-16(r1)
        std     r5,-8(r1)
        dcbt    0,r4
        beq     .Lcopy_page_4K
        andi.   r6,r6,7
        PPC_MTOCRF(0x01,r5)
        blt     cr1,.Lshort_copy
/* Below we want to nop out the bne if we're on a CPU that has the
 * CPU_FTR_UNALIGNED_LD_STD bit set and the CPU_FTR_CP_USE_DCBTZ bit
 * cleared.
 * At the time of writing the only CPU that has this combination of bits
 * set is Power6.
 */
BEGIN_FTR_SECTION
        nop
FTR_SECTION_ELSE
        bne     .Ldst_unaligned
ALT_FTR_SECTION_END(CPU_FTR_UNALIGNED_LD_STD | CPU_FTR_CP_USE_DCBTZ, \
                    CPU_FTR_UNALIGNED_LD_STD)
.Ldst_aligned:
        addi    r3,r3,-16
BEGIN_FTR_SECTION
        andi.   r0,r4,7
        bne     .Lsrc_unaligned
END_FTR_SECTION_IFCLR(CPU_FTR_UNALIGNED_LD_STD)
        blt     cr1,.Ldo_tail           /* if < 16 bytes to copy */
        srdi    r0,r5,5
        cmpdi   cr1,r0,0
```

```
20:     ld      r7,0(r4)
220:    ld      r6,8(r4)
        addi    r4,r4,16
        mtctr   r0
        andi.   r0,r5,0x10
        beq     22f
        addi    r3,r3,16
        addi    r4,r4,-16
        mr      r9,r7
        mr      r8,r6
        beq     cr1,72f
21:     ld      r7,16(r4)
221:    ld      r6,24(r4)
        addi    r4,r4,32
70:     std     r9,0(r3)
270:    std     r8,8(r3)
22:     ld      r9,0(r4)
222:    ld      r8,8(r4)
71:     std     r7,16(r3)
271:    std     r6,24(r3)
        addi    r3,r3,32
        bdnz    21b
72:     std     r9,0(r3)
272:    std     r8,8(r3)
        andi.   r5,r5,0xf
        beq+    3f
        addi    r4,r4,16
.Ldo_tail:
        addi    r3,r3,16
        bf      cr7*4+0,246f
244:    ld      r9,0(r4)
        addi    r4,r4,8
245:    std     r9,0(r3)
        addi    r3,r3,8
246:    bf      cr7*4+1,1f
23:     lwz     r9,0(r4)
        addi    r4,r4,4
73:     stw     r9,0(r3)
        addi    r3,r3,4
1:      bf      cr7*4+2,2f
44:     lhz     r9,0(r4)
        addi    r4,r4,2
74:     sth     r9,0(r3)
        addi    r3,r3,2
2:      bf      cr7*4+3,3f
45:     lbz     r9,0(r4)
75:     stb     r9,0(r3)
3:      li      r3,0
        blr

.Lsrc_unaligned:
        srdi    r6,r5,3
        addi    r5,r5,-16
        subf    r4,r0,r4
        srdi    r7,r5,4
        sldi    r10,r0,3
        cmpldi  cr6,r6,3
        andi.   r5,r5,7
        mtctr   r7
```

```
        subfic  r11,r10,64
        add     r5,r5,r0
        bt      cr7*4+0,28f

24:     ld      r9,0(r4)        /* 3+2n loads, 2+2n stores */
25:     ld      r0,8(r4)
        sLd     r6,r9,r10
26:     ldu     r9,16(r4)
        sHd     r7,r0,r11
        sLd     r8,r0,r10
        or      r7,r7,r6
        blt     cr6,79f
27:     ld      r0,8(r4)
        b       2f

28:     ld      r0,0(r4)        /* 4+2n loads, 3+2n stores */
29:     ldu     r9,8(r4)
        sLd     r8,r0,r10
        addi    r3,r3,-8
        blt     cr6,5f
30:     ld      r0,8(r4)
        sHd     r12,r9,r11
        sLd     r6,r9,r10
31:     ldu     r9,16(r4)
        or      r12,r8,r12
        sHd     r7,r0,r11
        sLd     r8,r0,r10
        addi    r3,r3,16
        beq     cr6,78f

1:      or      r7,r7,r6
32:     ld      r0,8(r4)
76:     std     r12,8(r3)
2:      sHd     r12,r9,r11
        sLd     r6,r9,r10
33:     ldu     r9,16(r4)
        or      r12,r8,r12
77:     stdu    r7,16(r3)
        sHd     r7,r0,r11
        sLd     r8,r0,r10
        bdnz    1b

78:     std     r12,8(r3)
        or      r7,r7,r6
79:     std     r7,16(r3)
5:      sHd     r12,r9,r11
        or      r12,r8,r12
80:     std     r12,24(r3)
        bne     6f
        li      r3,0
        blr
6:      cmpwi   cr1,r5,8
        addi    r3,r3,32
        sLd     r9,r9,r10
        ble     cr1,7f
34:     ld      r0,8(r4)
        sHd     r7,r0,r11
        or      r9,r7,r9
7:
```

```
        bf      cr7*4+1,1f
#ifdef __BIG_ENDIAN__
        rotldi  r9,r9,32
#endif
94:     stw     r9,0(r3)
#ifdef __LITTLE_ENDIAN__
        rotrdi  r9,r9,32
#endif
        addi    r3,r3,4
1:      bf      cr7*4+2,2f
#ifdef __BIG_ENDIAN__
        rotldi  r9,r9,16
#endif
95:     sth     r9,0(r3)
#ifdef __LITTLE_ENDIAN__
        rotrdi  r9,r9,16
#endif
        addi    r3,r3,2
2:      bf      cr7*4+3,3f
#ifdef __BIG_ENDIAN__
        rotldi  r9,r9,8
#endif
96:     stb     r9,0(r3)
#ifdef __LITTLE_ENDIAN__
        rotrdi  r9,r9,8
#endif
3:      li      r3,0
        blr

.Ldst_unaligned:
        PPC_MTOCRF(0x01,r6)             /* put #bytes to 8B bdry into cr7 */
        subf    r5,r6,r5
        li      r7,0
        cmpldi  cr1,r5,16
        bf      cr7*4+3,1f
35:     lbz     r0,0(r4)
81:     stb     r0,0(r3)
        addi    r7,r7,1
1:      bf      cr7*4+2,2f
36:     lhzx    r0,r7,r4
82:     sthx    r0,r7,r3
        addi    r7,r7,2
2:      bf      cr7*4+1,3f
37:     lwzx    r0,r7,r4
83:     stwx    r0,r7,r3
3:      PPC_MTOCRF(0x01,r5)
        add     r4,r6,r4
        add     r3,r6,r3
        b       .Ldst_aligned

.Lshort_copy:
        bf      cr7*4+0,1f
38:     lwz     r0,0(r4)
39:     lwz     r9,4(r4)
        addi    r4,r4,8
84:     stw     r0,0(r3)
85:     stw     r9,4(r3)
        addi    r3,r3,8
1:      bf      cr7*4+1,2f
```

```
40:     lwz     r0,0(r4)
        addi    r4,r4,4
86:     stw     r0,0(r3)
        addi    r3,r3,4
2:      bf      cr7*4+2,3f
41:     lhz     r0,0(r4)
        addi    r4,r4,2
87:     sth     r0,0(r3)
        addi    r3,r3,2
3:      bf      cr7*4+3,4f
42:     lbz     r0,0(r4)
88:     stb     r0,0(r3)
4:      li      r3,0
        blr

/*
 * exception handlers follow
 * we have to return the number of bytes not copied
 * for an exception on a load, we set the rest of the destination to 0
 */

136:
137:
        add     r3,r3,r7
        b       1f
130:
131:
        addi    r3,r3,8
120:
320:
122:
322:
124:
125:
126:
127:
128:
129:
133:
        addi    r3,r3,8
132:
        addi    r3,r3,8
121:
321:
344:
134:
135:
138:
139:
140:
141:
142:
123:
144:
145:

/*
 * here we have had a fault on a load and r3 points to the first
 * unmodified byte of the destination
```

```
 */
1:      ld      r6,-24(r1)
        ld      r4,-16(r1)
        ld      r5,-8(r1)
        subf    r6,r6,r3
        add     r4,r4,r6
        subf    r5,r6,r5        /* #bytes left to go */

/*
 * first see if we can copy any more bytes before hitting another exception
 */
        mtctr   r5
43:     lbz     r0,0(r4)
        addi    r4,r4,1
89:     stb     r0,0(r3)
        addi    r3,r3,1
        bdnz    43b
        li      r3,0            /* huh? all copied successfully this time? */
        blr

/*
 * here we have trapped again, amount remaining is in ctr.
 */
143:    mfctr   r3
        blr

/*
 * exception handlers for stores: we just need to work
 * out how many bytes weren't copied
 */
182:
183:
        add     r3,r3,r7
        b       1f
371:
180:
        addi    r3,r3,8
171:
177:
179:
        addi    r3,r3,8
370:
372:
176:
178:
        addi    r3,r3,4
185:
        addi    r3,r3,4
170:
172:
345:
173:
174:
175:
181:
184:
186:
187:
188:
```

```
189:
194:
195:
196:
1:
        ld      r6,-24(r1)
        ld      r5,-8(r1)
        add     r6,r6,r5
        subf    r3,r3,r6        /* #bytes not copied */
        blr

        EX_TABLE(20b,120b)
        EX_TABLE(220b,320b)
        EX_TABLE(21b,121b)
        EX_TABLE(221b,321b)
        EX_TABLE(70b,170b)
        EX_TABLE(270b,370b)
        EX_TABLE(22b,122b)
        EX_TABLE(222b,322b)
        EX_TABLE(71b,171b)
        EX_TABLE(271b,371b)
        EX_TABLE(72b,172b)
        EX_TABLE(272b,372b)
        EX_TABLE(244b,344b)
        EX_TABLE(245b,345b)
        EX_TABLE(23b,123b)
        EX_TABLE(73b,173b)
        EX_TABLE(44b,144b)
        EX_TABLE(74b,174b)
        EX_TABLE(45b,145b)
        EX_TABLE(75b,175b)
        EX_TABLE(24b,124b)
        EX_TABLE(25b,125b)
        EX_TABLE(26b,126b)
        EX_TABLE(27b,127b)
        EX_TABLE(28b,128b)
        EX_TABLE(29b,129b)
        EX_TABLE(30b,130b)
        EX_TABLE(31b,131b)
        EX_TABLE(32b,132b)
        EX_TABLE(76b,176b)
        EX_TABLE(33b,133b)
        EX_TABLE(77b,177b)
        EX_TABLE(78b,178b)
        EX_TABLE(79b,179b)
        EX_TABLE(80b,180b)
        EX_TABLE(34b,134b)
        EX_TABLE(94b,194b)
        EX_TABLE(95b,195b)
        EX_TABLE(96b,196b)
        EX_TABLE(35b,135b)
        EX_TABLE(81b,181b)
        EX_TABLE(36b,136b)
        EX_TABLE(82b,182b)
        EX_TABLE(37b,137b)
        EX_TABLE(83b,183b)
        EX_TABLE(38b,138b)
        EX_TABLE(39b,139b)
        EX_TABLE(84b,184b)
```

```
        EX_TABLE(85b,185b)
        EX_TABLE(40b,140b)
        EX_TABLE(86b,186b)
        EX_TABLE(41b,141b)
        EX_TABLE(87b,187b)
        EX_TABLE(42b,142b)
        EX_TABLE(88b,188b)
        EX_TABLE(43b,143b)
        EX_TABLE(89b,189b)

/*
 * Routine to copy a whole page of data, optimized for POWER4.
 * On POWER4 it is more than 50% faster than the simple loop
 * above (following the .Ldst_aligned label).
 */
.Lcopy_page_4K:
        std     r31,-32(1)
        std     r30,-40(1)
        std     r29,-48(1)
        std     r28,-56(1)
        std     r27,-64(1)
        std     r26,-72(1)
        std     r25,-80(1)
        std     r24,-88(1)
        std     r23,-96(1)
        std     r22,-104(1)
        std     r21,-112(1)
        std     r20,-120(1)
        li      r5,4096/32 - 1
        addi    r3,r3,-8
        li      r0,5
0:      addi    r5,r5,-24
        mtctr   r0
20:     ld      r22,640(4)
21:     ld      r21,512(4)
22:     ld      r20,384(4)
23:     ld      r11,256(4)
24:     ld      r9,128(4)
25:     ld      r7,0(4)
26:     ld      r25,648(4)
27:     ld      r24,520(4)
28:     ld      r23,392(4)
29:     ld      r10,264(4)
30:     ld      r8,136(4)
31:     ldu     r6,8(4)
        cmpwi   r5,24
1:
32:     std     r22,648(3)
33:     std     r21,520(3)
34:     std     r20,392(3)
35:     std     r11,264(3)
36:     std     r9,136(3)
37:     std     r7,8(3)
38:     ld      r28,648(4)
39:     ld      r27,520(4)
40:     ld      r26,392(4)
41:     ld      r31,264(4)
42:     ld      r30,136(4)
43:     ld      r29,8(4)
```

```
44:     std     r25,656(3)
45:     std     r24,528(3)
46:     std     r23,400(3)
47:     std     r10,272(3)
48:     std     r8,144(3)
49:     std     r6,16(3)
50:     ld      r22,656(4)
51:     ld      r21,528(4)
52:     ld      r20,400(4)
53:     ld      r11,272(4)
54:     ld      r9,144(4)
55:     ld      r7,16(4)
56:     std     r28,664(3)
57:     std     r27,536(3)
58:     std     r26,408(3)
59:     std     r31,280(3)
60:     std     r30,152(3)
61:     stdu    r29,24(3)
62:     ld      r25,664(4)
63:     ld      r24,536(4)
64:     ld      r23,408(4)
65:     ld      r10,280(4)
66:     ld      r8,152(4)
67:     ldu     r6,24(4)
        bdnz    1b
68:     std     r22,648(3)
69:     std     r21,520(3)
70:     std     r20,392(3)
71:     std     r11,264(3)
72:     std     r9,136(3)
73:     std     r7,8(3)
74:     addi    r4,r4,640
75:     addi    r3,r3,648
        bge     0b
        mtctr   r5
76:     ld      r7,0(4)
77:     ld      r8,8(4)
78:     ldu     r9,16(4)
3:
79:     ld      r10,8(4)
80:     std     r7,8(3)
81:     ld      r7,16(4)
82:     std     r8,16(3)
83:     ld      r8,24(4)
84:     std     r9,24(3)
85:     ldu     r9,32(4)
86:     stdu    r10,32(3)
        bdnz    3b
4:
87:     ld      r10,8(4)
88:     std     r7,8(3)
89:     std     r8,16(3)
90:     std     r9,24(3)
91:     std     r10,32(3)
9:      ld      r20,-120(1)
        ld      r21,-112(1)
        ld      r22,-104(1)
        ld      r23,-96(1)
        ld      r24,-88(1)
```

```
        ld      r25,-80(1)
        ld      r26,-72(1)
        ld      r27,-64(1)
        ld      r28,-56(1)
        ld      r29,-48(1)
        ld      r30,-40(1)
        ld      r31,-32(1)
        li      r3,0
        blr

/*
 * on an exception, reset to the beginning and jump back into the
 * standard __copy_tofrom_user
 */
100:    ld      r20,-120(1)
        ld      r21,-112(1)
        ld      r22,-104(1)
        ld      r23,-96(1)
        ld      r24,-88(1)
        ld      r25,-80(1)
        ld      r26,-72(1)
        ld      r27,-64(1)
        ld      r28,-56(1)
        ld      r29,-48(1)
        ld      r30,-40(1)
        ld      r31,-32(1)
        ld      r3,-24(r1)
        ld      r4,-16(r1)
        li      r5,4096
        b       .Ldst_aligned

        EX_TABLE(20b,100b)
        EX_TABLE(21b,100b)
        EX_TABLE(22b,100b)
        EX_TABLE(23b,100b)
        EX_TABLE(24b,100b)
        EX_TABLE(25b,100b)
        EX_TABLE(26b,100b)
        EX_TABLE(27b,100b)
        EX_TABLE(28b,100b)
        EX_TABLE(29b,100b)
        EX_TABLE(30b,100b)
        EX_TABLE(31b,100b)
        EX_TABLE(32b,100b)
        EX_TABLE(33b,100b)
        EX_TABLE(34b,100b)
        EX_TABLE(35b,100b)
        EX_TABLE(36b,100b)
        EX_TABLE(37b,100b)
        EX_TABLE(38b,100b)
        EX_TABLE(39b,100b)
        EX_TABLE(40b,100b)
        EX_TABLE(41b,100b)
        EX_TABLE(42b,100b)
        EX_TABLE(43b,100b)
        EX_TABLE(44b,100b)
        EX_TABLE(45b,100b)
        EX_TABLE(46b,100b)
        EX_TABLE(47b,100b)
```

```
        EX_TABLE(48b,100b)
        EX_TABLE(49b,100b)
        EX_TABLE(50b,100b)
        EX_TABLE(51b,100b)
        EX_TABLE(52b,100b)
        EX_TABLE(53b,100b)
        EX_TABLE(54b,100b)
        EX_TABLE(55b,100b)
        EX_TABLE(56b,100b)
        EX_TABLE(57b,100b)
        EX_TABLE(58b,100b)
        EX_TABLE(59b,100b)
        EX_TABLE(60b,100b)
        EX_TABLE(61b,100b)
        EX_TABLE(62b,100b)
        EX_TABLE(63b,100b)
        EX_TABLE(64b,100b)
        EX_TABLE(65b,100b)
        EX_TABLE(66b,100b)
        EX_TABLE(67b,100b)
        EX_TABLE(68b,100b)
        EX_TABLE(69b,100b)
        EX_TABLE(70b,100b)
        EX_TABLE(71b,100b)
        EX_TABLE(72b,100b)
        EX_TABLE(73b,100b)
        EX_TABLE(74b,100b)
        EX_TABLE(75b,100b)
        EX_TABLE(76b,100b)
        EX_TABLE(77b,100b)
        EX_TABLE(78b,100b)
        EX_TABLE(79b,100b)
        EX_TABLE(80b,100b)
        EX_TABLE(81b,100b)
        EX_TABLE(82b,100b)
        EX_TABLE(83b,100b)
        EX_TABLE(84b,100b)
        EX_TABLE(85b,100b)
        EX_TABLE(86b,100b)
        EX_TABLE(87b,100b)
        EX_TABLE(88b,100b)
        EX_TABLE(89b,100b)
        EX_TABLE(90b,100b)
        EX_TABLE(91b,100b)

EXPORT_SYMBOL(__copy_tofrom_user)
----------------------------------------------------------------------
linux/arch/powerpc/lib/copypage_power7.S
----------------------------------------------------------------------
/*
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License as published by
 * the Free Software Foundation; either version 2 of the License, or
 * (at your option) any later version.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
```

```
 *
 * You should have received a copy of the GNU General Public License
 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.
 *
 * Copyright (C) IBM Corporation, 2012
 *
 * Author: Anton Blanchard <anton@au.ibm.com>
 */
#include <asm/page.h>
#include <asm/ppc_asm.h>

_GLOBAL(copypage_power7)
        /*
         * We prefetch both the source and destination using enhanced touch
         * instructions. We use a stream ID of 0 for the load side and
         * 1 for the store side. Since source and destination are page
         * aligned we don't need to clear the bottom 7 bits of either
         * address.
         */
        ori     r9,r3,1         /* stream=1 => to */

#ifdef CONFIG_PPC_64K_PAGES
        lis     r7,0x0E01       /* depth=7
                                 * units/cachelines=512 */
#else
        lis     r7,0x0E00       /* depth=7 */
        ori     r7,r7,0x1000    /* units/cachelines=32 */
#endif
        ori     r10,r7,1        /* stream=1 */

        lis     r8,0x8000       /* GO=1 */
        clrldi  r8,r8,32

.machine push
.machine "power4"
        /* setup read stream 0  */
        dcbt    0,r4,0b01000    /* addr from */
        dcbt    0,r7,0b01010   /* length and depth from */
        /* setup write stream 1 */
        dcbtst  0,r9,0b01000   /* addr to */
        dcbtst  0,r10,0b01010  /* length and depth to */
        eieio
        dcbt    0,r8,0b01010    /* all streams GO */
.machine pop

#ifdef CONFIG_ALTIVEC
        mflr    r0
        std     r3,-STACKFRAMESIZE+STK_REG(R31)(r1)
        std     r4,-STACKFRAMESIZE+STK_REG(R30)(r1)
        std     r0,16(r1)
        stdu    r1,-STACKFRAMESIZE(r1)
        bl      enter_vmx_copy
        cmpwi   r3,0
        ld      r0,STACKFRAMESIZE+16(r1)
        ld      r3,STK_REG(R31)(r1)
        ld      r4,STK_REG(R30)(r1)
        mtlr    r0
```

```
        li      r0,(PAGE_SIZE/128)
        mtctr   r0

        beq     .Lnonvmx_copy

        addi    r1,r1,STACKFRAMESIZE

        li      r6,16
        li      r7,32
        li      r8,48
        li      r9,64
        li      r10,80
        li      r11,96
        li      r12,112

        .align  5
1:      lvx     v7,0,r4
        lvx     v6,r4,r6
        lvx     v5,r4,r7
        lvx     v4,r4,r8
        lvx     v3,r4,r9
        lvx     v2,r4,r10
        lvx     v1,r4,r11
        lvx     v0,r4,r12
        addi    r4,r4,128
        stvx    v7,0,r3
        stvx    v6,r3,r6
        stvx    v5,r3,r7
        stvx    v4,r3,r8
        stvx    v3,r3,r9
        stvx    v2,r3,r10
        stvx    v1,r3,r11
        stvx    v0,r3,r12
        addi    r3,r3,128
        bdnz    1b

        b       exit_vmx_copy           /* tail call optimise */

#else
        li      r0,(PAGE_SIZE/128)
        mtctr   r0

        stdu    r1,-STACKFRAMESIZE(r1)
#endif

.Lnonvmx_copy:
        std     r14,STK_REG(R14)(r1)
        std     r15,STK_REG(R15)(r1)
        std     r16,STK_REG(R16)(r1)
        std     r17,STK_REG(R17)(r1)
        std     r18,STK_REG(R18)(r1)
        std     r19,STK_REG(R19)(r1)
        std     r20,STK_REG(R20)(r1)

1:      ld      r0,0(r4)
        ld      r5,8(r4)
        ld      r6,16(r4)
        ld      r7,24(r4)
        ld      r8,32(r4)
```

```
        ld      r9,40(r4)
        ld      r10,48(r4)
        ld      r11,56(r4)
        ld      r12,64(r4)
        ld      r14,72(r4)
        ld      r15,80(r4)
        ld      r16,88(r4)
        ld      r17,96(r4)
        ld      r18,104(r4)
        ld      r19,112(r4)
        ld      r20,120(r4)
        addi    r4,r4,128
        std     r0,0(r3)
        std     r5,8(r3)
        std     r6,16(r3)
        std     r7,24(r3)
        std     r8,32(r3)
        std     r9,40(r3)
        std     r10,48(r3)
        std     r11,56(r3)
        std     r12,64(r3)
        std     r14,72(r3)
        std     r15,80(r3)
        std     r16,88(r3)
        std     r17,96(r3)
        std     r18,104(r3)
        std     r19,112(r3)
        std     r20,120(r3)
        addi    r3,r3,128
        bdnz    1b

        ld      r14,STK_REG(R14)(r1)
        ld      r15,STK_REG(R15)(r1)
        ld      r16,STK_REG(R16)(r1)
        ld      r17,STK_REG(R17)(r1)
        ld      r18,STK_REG(R18)(r1)
        ld      r19,STK_REG(R19)(r1)
        ld      r20,STK_REG(R20)(r1)
        addi    r1,r1,STACKFRAMESIZE
        blr
------------------------------------------------------------------
linux/arch/powerpc/lib/copyuser_power7.S
------------------------------------------------------------------
/*
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License as published by
 * the Free Software Foundation; either version 2 of the License, or
 * (at your option) any later version.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.
 *
 * Copyright (C) IBM Corporation, 2011
```

```
 *
 * Author: Anton Blanchard <anton@au.ibm.com>
 */
#include <asm/ppc_asm.h>

#ifdef __BIG_ENDIAN__
#define LVS(VRT,RA,RB)          lvsl    VRT,RA,RB
#define VPERM(VRT,VRA,VRB,VRC)  vperm   VRT,VRA,VRB,VRC
#else
#define LVS(VRT,RA,RB)          lvsr    VRT,RA,RB
#define VPERM(VRT,VRA,VRB,VRC)  vperm   VRT,VRB,VRA,VRC
#endif

        .macro err1
100:
        EX_TABLE(100b,.Ldo_err1)
        .endm

        .macro err2
200:
        EX_TABLE(200b,.Ldo_err2)
        .endm

#ifdef CONFIG_ALTIVEC
        .macro err3
300:
        EX_TABLE(300b,.Ldo_err3)
        .endm

        .macro err4
400:
        EX_TABLE(400b,.Ldo_err4)
        .endm


.Ldo_err4:
        ld      r16,STK_REG(R16)(r1)
        ld      r15,STK_REG(R15)(r1)
        ld      r14,STK_REG(R14)(r1)
.Ldo_err3:
        bl      exit_vmx_usercopy
        ld      r0,STACKFRAMESIZE+16(r1)
        mtlr    r0
        b       .Lexit
#endif /* CONFIG_ALTIVEC */

.Ldo_err2:
        ld      r22,STK_REG(R22)(r1)
        ld      r21,STK_REG(R21)(r1)
        ld      r20,STK_REG(R20)(r1)
        ld      r19,STK_REG(R19)(r1)
        ld      r18,STK_REG(R18)(r1)
        ld      r17,STK_REG(R17)(r1)
        ld      r16,STK_REG(R16)(r1)
        ld      r15,STK_REG(R15)(r1)
        ld      r14,STK_REG(R14)(r1)
.Lexit:
        addi    r1,r1,STACKFRAMESIZE
.Ldo_err1:
```

```
        ld      r3,-STACKFRAMESIZE+STK_REG(R31)(r1)
        ld      r4,-STACKFRAMESIZE+STK_REG(R30)(r1)
        ld      r5,-STACKFRAMESIZE+STK_REG(R29)(r1)
        b       __copy_tofrom_user_base


_GLOBAL(__copy_tofrom_user_power7)
#ifdef CONFIG_ALTIVEC
        cmpldi  r5,16
        cmpldi  cr1,r5,3328

        std     r3,-STACKFRAMESIZE+STK_REG(R31)(r1)
        std     r4,-STACKFRAMESIZE+STK_REG(R30)(r1)
        std     r5,-STACKFRAMESIZE+STK_REG(R29)(r1)

        blt     .Lshort_copy
        bge     cr1,.Lvmx_copy
#else
        cmpldi  r5,16

        std     r3,-STACKFRAMESIZE+STK_REG(R31)(r1)
        std     r4,-STACKFRAMESIZE+STK_REG(R30)(r1)
        std     r5,-STACKFRAMESIZE+STK_REG(R29)(r1)

        blt     .Lshort_copy
#endif

.Lnonvmx_copy:
        /* Get the source 8B aligned */
        neg     r6,r4
        mtocrf  0x01,r6
        clrldi  r6,r6,(64-3)

        bf      cr7*4+3,1f
err1;   lbz     r0,0(r4)
        addi    r4,r4,1
err1;   stb     r0,0(r3)
        addi    r3,r3,1

1:      bf      cr7*4+2,2f
err1;   lhz     r0,0(r4)
        addi    r4,r4,2
err1;   sth     r0,0(r3)
        addi    r3,r3,2

2:      bf      cr7*4+1,3f
err1;   lwz     r0,0(r4)
        addi    r4,r4,4
err1;   stw     r0,0(r3)
        addi    r3,r3,4

3:      sub     r5,r5,r6
        cmpldi  r5,128
        blt     5f

        mflr    r0
        stdu    r1,-STACKFRAMESIZE(r1)
        std     r14,STK_REG(R14)(r1)
        std     r15,STK_REG(R15)(r1)
```

```
        std     r16,STK_REG(R16)(r1)
        std     r17,STK_REG(R17)(r1)
        std     r18,STK_REG(R18)(r1)
        std     r19,STK_REG(R19)(r1)
        std     r20,STK_REG(R20)(r1)
        std     r21,STK_REG(R21)(r1)
        std     r22,STK_REG(R22)(r1)
        std     r0,STACKFRAMESIZE+16(r1)

        srdi    r6,r5,7
        mtctr   r6

        /* Now do cacheline (128B) sized loads and stores. */
        .align  5
4:
err2;   ld      r0,0(r4)
err2;   ld      r6,8(r4)
err2;   ld      r7,16(r4)
err2;   ld      r8,24(r4)
err2;   ld      r9,32(r4)
err2;   ld      r10,40(r4)
err2;   ld      r11,48(r4)
err2;   ld      r12,56(r4)
err2;   ld      r14,64(r4)
err2;   ld      r15,72(r4)
err2;   ld      r16,80(r4)
err2;   ld      r17,88(r4)
err2;   ld      r18,96(r4)
err2;   ld      r19,104(r4)
err2;   ld      r20,112(r4)
err2;   ld      r21,120(r4)
        addi    r4,r4,128
err2;   std     r0,0(r3)
err2;   std     r6,8(r3)
err2;   std     r7,16(r3)
err2;   std     r8,24(r3)
err2;   std     r9,32(r3)
err2;   std     r10,40(r3)
err2;   std     r11,48(r3)
err2;   std     r12,56(r3)
err2;   std     r14,64(r3)
err2;   std     r15,72(r3)
err2;   std     r16,80(r3)
err2;   std     r17,88(r3)
err2;   std     r18,96(r3)
err2;   std     r19,104(r3)
err2;   std     r20,112(r3)
err2;   std     r21,120(r3)
        addi    r3,r3,128
        bdnz    4b

        clrldi  r5,r5,(64-7)

        ld      r14,STK_REG(R14)(r1)
        ld      r15,STK_REG(R15)(r1)
        ld      r16,STK_REG(R16)(r1)
        ld      r17,STK_REG(R17)(r1)
        ld      r18,STK_REG(R18)(r1)
        ld      r19,STK_REG(R19)(r1)
```

```
        ld      r20,STK_REG(R20)(r1)
        ld      r21,STK_REG(R21)(r1)
        ld      r22,STK_REG(R22)(r1)
        addi    r1,r1,STACKFRAMESIZE

        /* Up to 127B to go */
5:      srdi    r6,r5,4
        mtocrf  0x01,r6

6:      bf      cr7*4+1,7f
err1;   ld      r0,0(r4)
err1;   ld      r6,8(r4)
err1;   ld      r7,16(r4)
err1;   ld      r8,24(r4)
err1;   ld      r9,32(r4)
err1;   ld      r10,40(r4)
err1;   ld      r11,48(r4)
err1;   ld      r12,56(r4)
        addi    r4,r4,64
err1;   std     r0,0(r3)
err1;   std     r6,8(r3)
err1;   std     r7,16(r3)
err1;   std     r8,24(r3)
err1;   std     r9,32(r3)
err1;   std     r10,40(r3)
err1;   std     r11,48(r3)
err1;   std     r12,56(r3)
        addi    r3,r3,64

        /* Up to 63B to go */
7:      bf      cr7*4+2,8f
err1;   ld      r0,0(r4)
err1;   ld      r6,8(r4)
err1;   ld      r7,16(r4)
err1;   ld      r8,24(r4)
        addi    r4,r4,32
err1;   std     r0,0(r3)
err1;   std     r6,8(r3)
err1;   std     r7,16(r3)
err1;   std     r8,24(r3)
        addi    r3,r3,32

        /* Up to 31B to go */
8:      bf      cr7*4+3,9f
err1;   ld      r0,0(r4)
err1;   ld      r6,8(r4)
        addi    r4,r4,16
err1;   std     r0,0(r3)
err1;   std     r6,8(r3)
        addi    r3,r3,16

9:      clrldi  r5,r5,(64-4)

        /* Up to 15B to go */
.Lshort_copy:
        mtocrf  0x01,r5
        bf      cr7*4+0,12f
err1;   lwz     r0,0(r4)        /* Less chance of a reject with word ops */
err1;   lwz     r6,4(r4)
```

```
        addi    r4,r4,8
err1;   stw     r0,0(r3)
err1;   stw     r6,4(r3)
        addi    r3,r3,8

12:     bf      cr7*4+1,13f
err1;   lwz     r0,0(r4)
        addi    r4,r4,4
err1;   stw     r0,0(r3)
        addi    r3,r3,4

13:     bf      cr7*4+2,14f
err1;   lhz     r0,0(r4)
        addi    r4,r4,2
err1;   sth     r0,0(r3)
        addi    r3,r3,2

14:     bf      cr7*4+3,15f
err1;   lbz     r0,0(r4)
err1;   stb     r0,0(r3)

15:     li      r3,0
        blr

.Lunwind_stack_nonvmx_copy:
        addi    r1,r1,STACKFRAMESIZE
        b       .Lnonvmx_copy

#ifdef CONFIG_ALTIVEC
.Lvmx_copy:
        mflr    r0
        std     r0,16(r1)
        stdu    r1,-STACKFRAMESIZE(r1)
        bl      enter_vmx_usercopy
        cmpwi   cr1,r3,0
        ld      r0,STACKFRAMESIZE+16(r1)
        ld      r3,STK_REG(R31)(r1)
        ld      r4,STK_REG(R30)(r1)
        ld      r5,STK_REG(R29)(r1)
        mtlr    r0

        /*
         * We prefetch both the source and destination using enhanced touch
         * instructions. We use a stream ID of 0 for the load side and
         * 1 for the store side.
         */
        clrrdi  r6,r4,7
        clrrdi  r9,r3,7
        ori     r9,r9,1         /* stream=1 */

        srdi    r7,r5,7         /* length in cachelines, capped at 0x3FF */
        cmpldi  r7,0x3FF
        ble     1f
        li      r7,0x3FF
1:      lis     r0,0x0E00       /* depth=7 */
        sldi    r7,r7,7
        or      r7,r7,r0
        ori     r10,r7,1        /* stream=1 */
```

```
        lis     r8,0x8000       /* GO=1 */
        clrldi  r8,r8,32

.machine push
.machine "power4"
        /* setup read stream 0 */
        dcbt    0,r6,0b01000   /* addr from */
        dcbt    0,r7,0b01010   /* length and depth from */
        /* setup write stream 1 */
        dcbtst  0,r9,0b01000   /* addr to */
        dcbtst  0,r10,0b01010  /* length and depth to */
        eieio
        dcbt    0,r8,0b01010    /* all streams GO */
.machine pop

        beq     cr1,.Lunwind_stack_nonvmx_copy

        /*
         * If source and destination are not relatively aligned we use a
         * slower permute loop.
         */
        xor     r6,r4,r3
        rldicl. r6,r6,0,(64-4)
        bne     .Lvmx_unaligned_copy

        /* Get the destination 16B aligned */
        neg     r6,r3
        mtocrf  0x01,r6
        clrldi  r6,r6,(64-4)

        bf      cr7*4+3,1f
err3;   lbz     r0,0(r4)
        addi    r4,r4,1
err3;   stb     r0,0(r3)
        addi    r3,r3,1

1:      bf      cr7*4+2,2f
err3;   lhz     r0,0(r4)
        addi    r4,r4,2
err3;   sth     r0,0(r3)
        addi    r3,r3,2

2:      bf      cr7*4+1,3f
err3;   lwz     r0,0(r4)
        addi    r4,r4,4
err3;   stw     r0,0(r3)
        addi    r3,r3,4

3:      bf      cr7*4+0,4f
err3;   ld      r0,0(r4)
        addi    r4,r4,8
err3;   std     r0,0(r3)
        addi    r3,r3,8

4:      sub     r5,r5,r6

        /* Get the desination 128B aligned */
        neg     r6,r3
        srdi    r7,r6,4
```

```
        mtocrf  0x01,r7
        clrldi  r6,r6,(64-7)

        li      r9,16
        li      r10,32
        li      r11,48

        bf      cr7*4+3,5f
err3;   lvx     v1,0,r4
        addi    r4,r4,16
err3;   stvx    v1,0,r3
        addi    r3,r3,16

5:      bf      cr7*4+2,6f
err3;   lvx     v1,0,r4
err3;   lvx     v0,r4,r9
        addi    r4,r4,32
err3;   stvx    v1,0,r3
err3;   stvx    v0,r3,r9
        addi    r3,r3,32

6:      bf      cr7*4+1,7f
err3;   lvx     v3,0,r4
err3;   lvx     v2,r4,r9
err3;   lvx     v1,r4,r10
err3;   lvx     v0,r4,r11
        addi    r4,r4,64
err3;   stvx    v3,0,r3
err3;   stvx    v2,r3,r9
err3;   stvx    v1,r3,r10
err3;   stvx    v0,r3,r11
        addi    r3,r3,64

7:      sub     r5,r5,r6
        srdi    r6,r5,7

        std     r14,STK_REG(R14)(r1)
        std     r15,STK_REG(R15)(r1)
        std     r16,STK_REG(R16)(r1)

        li      r12,64
        li      r14,80
        li      r15,96
        li      r16,112

        mtctr   r6

        /*
         * Now do cacheline sized loads and stores. By this stage the
         * cacheline stores are also cacheline aligned.
         */
        .align  5
8:
err4;   lvx     v7,0,r4
err4;   lvx     v6,r4,r9
err4;   lvx     v5,r4,r10
err4;   lvx     v4,r4,r11
err4;   lvx     v3,r4,r12
err4;   lvx     v2,r4,r14
```

```
err4;   lvx     v1,r4,r15
err4;   lvx     v0,r4,r16
        addi    r4,r4,128
err4;   stvx    v7,0,r3
err4;   stvx    v6,r3,r9
err4;   stvx    v5,r3,r10
err4;   stvx    v4,r3,r11
err4;   stvx    v3,r3,r12
err4;   stvx    v2,r3,r14
err4;   stvx    v1,r3,r15
err4;   stvx    v0,r3,r16
        addi    r3,r3,128
        bdnz    8b

        ld      r14,STK_REG(R14)(r1)
        ld      r15,STK_REG(R15)(r1)
        ld      r16,STK_REG(R16)(r1)

        /* Up to 127B to go */
        clrldi  r5,r5,(64-7)
        srdi    r6,r5,4
        mtocrf  0x01,r6

        bf      cr7*4+1,9f
err3;   lvx     v3,0,r4
err3;   lvx     v2,r4,r9
err3;   lvx     v1,r4,r10
err3;   lvx     v0,r4,r11
        addi    r4,r4,64
err3;   stvx    v3,0,r3
err3;   stvx    v2,r3,r9
err3;   stvx    v1,r3,r10
err3;   stvx    v0,r3,r11
        addi    r3,r3,64

9:      bf      cr7*4+2,10f
err3;   lvx     v1,0,r4
err3;   lvx     v0,r4,r9
        addi    r4,r4,32
err3;   stvx    v1,0,r3
err3;   stvx    v0,r3,r9
        addi    r3,r3,32

10:     bf      cr7*4+3,11f
err3;   lvx     v1,0,r4
        addi    r4,r4,16
err3;   stvx    v1,0,r3
        addi    r3,r3,16

        /* Up to 15B to go */
11:     clrldi  r5,r5,(64-4)
        mtocrf  0x01,r5
        bf      cr7*4+0,12f
err3;   ld      r0,0(r4)
        addi    r4,r4,8
err3;   std     r0,0(r3)
        addi    r3,r3,8

12:     bf      cr7*4+1,13f
```

```
err3;   lwz     r0,0(r4)
        addi    r4,r4,4
err3;   stw     r0,0(r3)
        addi    r3,r3,4

13:     bf      cr7*4+2,14f
err3;   lhz     r0,0(r4)
        addi    r4,r4,2
err3;   sth     r0,0(r3)
        addi    r3,r3,2

14:     bf      cr7*4+3,15f
err3;   lbz     r0,0(r4)
err3;   stb     r0,0(r3)

15:     addi    r1,r1,STACKFRAMESIZE
        b       exit_vmx_usercopy       /* tail call optimise */

.Lvmx_unaligned_copy:
        /* Get the destination 16B aligned */
        neg     r6,r3
        mtocrf  0x01,r6
        clrldi  r6,r6,(64-4)

        bf      cr7*4+3,1f
err3;   lbz     r0,0(r4)
        addi    r4,r4,1
err3;   stb     r0,0(r3)
        addi    r3,r3,1

1:      bf      cr7*4+2,2f
err3;   lhz     r0,0(r4)
        addi    r4,r4,2
err3;   sth     r0,0(r3)
        addi    r3,r3,2

2:      bf      cr7*4+1,3f
err3;   lwz     r0,0(r4)
        addi    r4,r4,4
err3;   stw     r0,0(r3)
        addi    r3,r3,4

3:      bf      cr7*4+0,4f
err3;   lwz     r0,0(r4)        /* Less chance of a reject with word ops */
err3;   lwz     r7,4(r4)
        addi    r4,r4,8
err3;   stw     r0,0(r3)
err3;   stw     r7,4(r3)
        addi    r3,r3,8

4:      sub     r5,r5,r6

        /* Get the desination 128B aligned */
        neg     r6,r3
        srdi    r7,r6,4
        mtocrf  0x01,r7
        clrldi  r6,r6,(64-7)

        li      r9,16
```

```
        li      r10,32
        li      r11,48

        LVS(v16,0,r4)           /* Setup permute control vector */
err3;   lvx     v0,0,r4
        addi    r4,r4,16

        bf      cr7*4+3,5f
err3;   lvx     v1,0,r4
        VPERM(v8,v0,v1,v16)
        addi    r4,r4,16
err3;   stvx    v8,0,r3
        addi    r3,r3,16
        vor     v0,v1,v1

5:      bf      cr7*4+2,6f
err3;   lvx     v1,0,r4
        VPERM(v8,v0,v1,v16)
err3;   lvx     v0,r4,r9
        VPERM(v9,v1,v0,v16)
        addi    r4,r4,32
err3;   stvx    v8,0,r3
err3;   stvx    v9,r3,r9
        addi    r3,r3,32

6:      bf      cr7*4+1,7f
err3;   lvx     v3,0,r4
        VPERM(v8,v0,v3,v16)
err3;   lvx     v2,r4,r9
        VPERM(v9,v3,v2,v16)
err3;   lvx     v1,r4,r10
        VPERM(v10,v2,v1,v16)
err3;   lvx     v0,r4,r11
        VPERM(v11,v1,v0,v16)
        addi    r4,r4,64
err3;   stvx    v8,0,r3
err3;   stvx    v9,r3,r9
err3;   stvx    v10,r3,r10
err3;   stvx    v11,r3,r11
        addi    r3,r3,64

7:      sub     r5,r5,r6
        srdi    r6,r5,7

        std     r14,STK_REG(R14)(r1)
        std     r15,STK_REG(R15)(r1)
        std     r16,STK_REG(R16)(r1)

        li      r12,64
        li      r14,80
        li      r15,96
        li      r16,112

        mtctr   r6

        /*
         * Now do cacheline sized loads and stores. By this stage the
         * cacheline stores are also cacheline aligned.
         */
```

```
        .align  5
8:
err4;   lvx     v7,0,r4
        VPERM(v8,v0,v7,v16)
err4;   lvx     v6,r4,r9
        VPERM(v9,v7,v6,v16)
err4;   lvx     v5,r4,r10
        VPERM(v10,v6,v5,v16)
err4;   lvx     v4,r4,r11
        VPERM(v11,v5,v4,v16)
err4;   lvx     v3,r4,r12
        VPERM(v12,v4,v3,v16)
err4;   lvx     v2,r4,r14
        VPERM(v13,v3,v2,v16)
err4;   lvx     v1,r4,r15
        VPERM(v14,v2,v1,v16)
err4;   lvx     v0,r4,r16
        VPERM(v15,v1,v0,v16)
        addi    r4,r4,128
err4;   stvx    v8,0,r3
err4;   stvx    v9,r3,r9
err4;   stvx    v10,r3,r10
err4;   stvx    v11,r3,r11
err4;   stvx    v12,r3,r12
err4;   stvx    v13,r3,r14
err4;   stvx    v14,r3,r15
err4;   stvx    v15,r3,r16
        addi    r3,r3,128
        bdnz    8b

        ld      r14,STK_REG(R14)(r1)
        ld      r15,STK_REG(R15)(r1)
        ld      r16,STK_REG(R16)(r1)

        /* Up to 127B to go */
        clrldi  r5,r5,(64-7)
        srdi    r6,r5,4
        mtocrf  0x01,r6

        bf      cr7*4+1,9f
err3;   lvx     v3,0,r4
        VPERM(v8,v0,v3,v16)
err3;   lvx     v2,r4,r9
        VPERM(v9,v3,v2,v16)
err3;   lvx     v1,r4,r10
        VPERM(v10,v2,v1,v16)
err3;   lvx     v0,r4,r11
        VPERM(v11,v1,v0,v16)
        addi    r4,r4,64
err3;   stvx    v8,0,r3
err3;   stvx    v9,r3,r9
err3;   stvx    v10,r3,r10
err3;   stvx    v11,r3,r11
        addi    r3,r3,64

9:      bf      cr7*4+2,10f
err3;   lvx     v1,0,r4
        VPERM(v8,v0,v1,v16)
err3;   lvx     v0,r4,r9
```

```
        VPERM(v9,v1,v0,v16)
        addi    r4,r4,32
err3;   stvx    v8,0,r3
err3;   stvx    v9,r3,r9
        addi    r3,r3,32

10:     bf      cr7*4+3,11f
err3;   lvx     v1,0,r4
        VPERM(v8,v0,v1,v16)
        addi    r4,r4,16
err3;   stvx    v8,0,r3
        addi    r3,r3,16

        /* Up to 15B to go */
11:     clrldi  r5,r5,(64-4)
        addi    r4,r4,-16       /* Unwind the +16 load offset */
        mtocrf  0x01,r5
        bf      cr7*4+0,12f
err3;   lwz     r0,0(r4)        /* Less chance of a reject with word ops */
err3;   lwz     r6,4(r4)
        addi    r4,r4,8
err3;   stw     r0,0(r3)
err3;   stw     r6,4(r3)
        addi    r3,r3,8

12:     bf      cr7*4+1,13f
err3;   lwz     r0,0(r4)
        addi    r4,r4,4
err3;   stw     r0,0(r3)
        addi    r3,r3,4

13:     bf      cr7*4+2,14f
err3;   lhz     r0,0(r4)
        addi    r4,r4,2
err3;   sth     r0,0(r3)
        addi    r3,r3,2

14:     bf      cr7*4+3,15f
err3;   lbz     r0,0(r4)
err3;   stb     r0,0(r3)

15:     addi    r1,r1,STACKFRAMESIZE
        b       exit_vmx_usercopy       /* tail call optimise */
#endif /* CONFIG_ALTIVEC */
---------------------------------------------------------------
linux/arch/powerpc/platforms/powernv/copy-paste.h
---------------------------------------------------------------
/*
 * Copyright 2016-17 IBM Corp.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 */
#include <asm/ppc-opcode.h>

#define CRO_SHIFT       28
#define CRO_MASK        0xF
```

```
/*
 * Copy/paste instructions:
 *
 *      copy RA,RB
 *              Copy contents of address (RA) + effective_address(RB)
 *              to internal copy-buffer.
 *
 *      paste RA,RB
 *              Paste contents of internal copy-buffer to the address
 *              (RA) + effective_address(RB)
 */
static inline int vas_copy(void *crb, int offset)
{
        asm volatile(PPC_COPY(%0, %1)";"
                :
                : "b" (offset), "b" (crb)
                : "memory");

        return 0;
}

static inline int vas_paste(void *paste_address, int offset)
{
        u32 cr;

        cr = 0;
        asm volatile(PPC_PASTE(%1, %2)";"
                "mfocrf %0, 0x80;"
                : "=r" (cr)
                : "b" (offset), "b" (paste_address)
                : "memory", "cr0");

        return (cr >> CR0_SHIFT) & CR0_MASK;
}
----------------------------------------------------------------------
linux/arch/sh/lib/copy_page.S
----------------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/*
 * copy_page, __copy_user_page, __copy_user implementation of SuperH
 *
 * Copyright (C) 2001  Niibe Yutaka & Kaz Kojima
 * Copyright (C) 2002  Toshinobu Sugioka
 * Copyright (C) 2006  Paul Mundt
 */
#include <linux/linkage.h>
#include <asm/page.h>

/*
 * copy_page
 * @to: P1 address
 * @from: P1 address
 *
 * void copy_page(void *to, void *from)
 */

/*
 * r0, r1, r2, r3, r4, r5, r6, r7 --- scratch
 * r8 --- from + PAGE_SIZE
```

```
 * r9 --- not used
 * r10 --- to
 * r11 --- from
 */
ENTRY(copy_page)
        mov.l   r8,@-r15
        mov.l   r10,@-r15
        mov.l   r11,@-r15
        mov     r4,r10
        mov     r5,r11
        mov     r5,r8
        mov     #(PAGE_SIZE >> 10), r0
        shll8   r0
        shll2   r0
        add     r0,r8
        !
1:      mov.l   @r11+,r0
        mov.l   @r11+,r1
        mov.l   @r11+,r2
        mov.l   @r11+,r3
        mov.l   @r11+,r4
        mov.l   @r11+,r5
        mov.l   @r11+,r6
        mov.l   @r11+,r7
#if defined(CONFIG_CPU_SH4)
        movca.l r0,@r10
#else
        mov.l   r0,@r10
#endif
        add     #32,r10
        mov.l   r7,@-r10
        mov.l   r6,@-r10
        mov.l   r5,@-r10
        mov.l   r4,@-r10
        mov.l   r3,@-r10
        mov.l   r2,@-r10
        mov.l   r1,@-r10
        cmp/eq  r11,r8
        bf/s    1b
         add    #28,r10
        !
        mov.l   @r15+,r11
        mov.l   @r15+,r10
        mov.l   @r15+,r8
        rts
         nop

/*
 * __kernel_size_t __copy_user(void *to, const void *from, __kernel_size_t n);
 * Return the number of bytes NOT copied
 */
#define EX(...)                 \
        9999: __VA_ARGS__ ;             \
        .section __ex_table, "a";       \
        .long 9999b, 6000f      ;       \
        .previous
#define EX_NO_POP(...)                  \
        9999: __VA_ARGS__ ;             \
        .section __ex_table, "a";       \
```

```
        .long 9999b, 6005f      ;       \
        .previous
ENTRY(__copy_user)
        ! Check if small number of bytes
        mov     #11,r0
        mov     r4,r3
        cmp/gt  r0,r6           ! r6 (len) > r0 (11)
        bf/s    .L_cleanup_loop_no_pop
         add    r6,r3           ! last destination address

        ! Calculate bytes needed to align to src
        mov.l   r11,@-r15
        neg     r5,r0
        mov.l   r10,@-r15
        add     #4,r0
        mov.l   r9,@-r15
        and     #3,r0
        mov.l   r8,@-r15
        tst     r0,r0
        bt      2f

1:
        ! Copy bytes to long word align src
EX(     mov.b   @r5+,r1         )
        dt      r0
        add     #-1,r6
EX(     mov.b   r1,@r4          )
        bf/s    1b
         add    #1,r4

        ! Jump to appropriate routine depending on dest
2:      mov     #3,r1
        mov     r6, r2
        and     r4,r1
        shlr2   r2
        shll2   r1
        mova    .L_jump_tbl,r0
        mov.l   @(r0,r1),r1
        jmp     @r1
         nop

        .align 2
.L_jump_tbl:
        .long   .L_dest00
        .long   .L_dest01
        .long   .L_dest10
        .long   .L_dest11

/*
 * Come here if there are less than 12 bytes to copy
 *
 * Keep the branch target close, so the bf/s callee doesn't overflow
 * and result in a more expensive branch being inserted. This is the
 * fast-path for small copies, the jump via the jump table will hit the
 * default slow-path cleanup. -PFM.
 */
.L_cleanup_loop_no_pop:
        tst     r6,r6           ! Check explicitly for zero
        bt      1f
```

```
2:
EX_NO_POP(      mov.b   @r5+,r0         )
        dt      r6
EX_NO_POP(      mov.b   r0,@r4          )
        bf/s    2b
         add    #1,r4

1:      mov     #0,r0           ! normal return
5000:

# Exception handler:
.section .fixup, "ax"
6005:
        mov.l   8000f,r1
        mov     r3,r0
        jmp     @r1
         sub    r4,r0
        .align  2
8000:   .long   5000b

.previous
        rts
         nop

! Destination = 00

.L_dest00:
        ! Skip the large copy for small transfers
        mov     #(32+32-4), r0
        cmp/gt  r6, r0          ! r0 (60) > r6 (len)
        bt      1f

        ! Align dest to a 32 byte boundary
        neg     r4,r0
        add     #0x20, r0
        and     #0x1f, r0
        tst     r0, r0
        bt      2f

        sub     r0, r6
        shlr2   r0
3:
EX(     mov.l   @r5+,r1         )
        dt      r0
EX(     mov.l   r1,@r4          )
        bf/s    3b
         add    #4,r4

2:
EX(     mov.l   @r5+,r0         )
EX(     mov.l   @r5+,r1         )
EX(     mov.l   @r5+,r2         )
EX(     mov.l   @r5+,r7         )
EX(     mov.l   @r5+,r8         )
EX(     mov.l   @r5+,r9         )
EX(     mov.l   @r5+,r10        )
EX(     mov.l   @r5+,r11        )
#ifdef CONFIG_CPU_SH4
```

```
EX(     movca.l r0,@r4          )
#else
EX(     mov.l   r0,@r4          )
#endif
        add     #-32, r6
EX(     mov.l   r1,@(4,r4)      )
        mov     #32, r0
EX(     mov.l   r2,@(8,r4)      )
        cmp/gt  r6, r0          ! r0 (32) > r6 (len)
EX(     mov.l   r7,@(12,r4)     )
EX(     mov.l   r8,@(16,r4)     )
EX(     mov.l   r9,@(20,r4)     )
EX(     mov.l   r10,@(24,r4)    )
EX(     mov.l   r11,@(28,r4)    )
        bf/s    2b
         add    #32,r4

1:      mov     r6, r0
        shlr2   r0
        tst     r0, r0
        bt      .L_cleanup
1:
EX(     mov.l   @r5+,r1         )
        dt      r0
EX(     mov.l   r1,@r4          )
        bf/s    1b
         add    #4,r4

        bra     .L_cleanup
         nop

! Destination = 10

.L_dest10:
        mov     r2,r7
        shlr2   r7
        shlr    r7
        tst     r7,r7
        mov     #7,r0
        bt/s    1f
         and    r0,r2
2:
        dt      r7
#ifdef CONFIG_CPU_LITTLE_ENDIAN
EX(     mov.l   @r5+,r0         )
EX(     mov.l   @r5+,r1         )
EX(     mov.l   @r5+,r8         )
EX(     mov.l   @r5+,r9         )
EX(     mov.l   @r5+,r10        )
EX(     mov.w   r0,@r4          )
        add     #2,r4
        xtrct   r1,r0
        xtrct   r8,r1
        xtrct   r9,r8
        xtrct   r10,r9

EX(     mov.l   r0,@r4          )
EX(     mov.l   r1,@(4,r4)      )
EX(     mov.l   r8,@(8,r4)      )
```

```
EX(     mov.l   r9,@(12,r4)     )

EX(     mov.l   @r5+,r1         )
EX(     mov.l   @r5+,r8         )
EX(     mov.l   @r5+,r0         )
        xtrct   r1,r10
        xtrct   r8,r1
        xtrct   r0,r8
        shlr16  r0
EX(     mov.l   r10,@(16,r4)    )
EX(     mov.l   r1,@(20,r4)     )
EX(     mov.l   r8,@(24,r4)     )
EX(     mov.w   r0,@(28,r4)     )
        bf/s    2b
         add    #30,r4
#else
EX(     mov.l   @(28,r5),r0     )
EX(     mov.l   @(24,r5),r8     )
EX(     mov.l   @(20,r5),r9     )
EX(     mov.l   @(16,r5),r10    )
EX(     mov.w   r0,@(30,r4)     )
        add     #-2,r4
        xtrct   r8,r0
        xtrct   r9,r8
        xtrct   r10,r9
EX(     mov.l   r0,@(28,r4)     )
EX(     mov.l   r8,@(24,r4)     )
EX(     mov.l   r9,@(20,r4)     )

EX(     mov.l   @(12,r5),r0     )
EX(     mov.l   @(8,r5),r8      )
        xtrct   r0,r10
EX(     mov.l   @(4,r5),r9      )
        mov.l   r10,@(16,r4)
EX(     mov.l   @r5,r10         )
        xtrct   r8,r0
        xtrct   r9,r8
        xtrct   r10,r9
EX(     mov.l   r0,@(12,r4)     )
EX(     mov.l   r8,@(8,r4)      )
        swap.w  r10,r0
EX(     mov.l   r9,@(4,r4)      )
EX(     mov.w   r0,@(2,r4)      )

        add     #32,r5
        bf/s    2b
         add    #34,r4
#endif
        tst     r2,r2
        bt      .L_cleanup

1:      ! Read longword, write two words per iteration
EX(     mov.l   @r5+,r0         )
        dt      r2
#ifdef CONFIG_CPU_LITTLE_ENDIAN
EX(     mov.w   r0,@r4          )
        shlr16  r0
EX(     mov.w   r0,@(2,r4)      )
#else
```

```
EX(     mov.w   r0,@(2,r4)      )
        shlr16  r0
EX(     mov.w   r0,@r4          )
#endif
        bf/s    1b
         add    #4,r4

        bra     .L_cleanup
         nop

! Destination = 01 or 11

.L_dest01:
.L_dest11:
        ! Read longword, write byte, word, byte per iteration
EX(     mov.l   @r5+,r0         )
        dt      r2
#ifdef CONFIG_CPU_LITTLE_ENDIAN
EX(     mov.b   r0,@r4          )
        shlr8   r0
        add     #1,r4
EX(     mov.w   r0,@r4          )
        shlr16  r0
EX(     mov.b   r0,@(2,r4)      )
        bf/s    .L_dest01
         add    #3,r4
#else
EX(     mov.b   r0,@(3,r4)      )
        shlr8   r0
        swap.w  r0,r7
EX(     mov.b   r7,@r4          )
        add     #1,r4
EX(     mov.w   r0,@r4          )
        bf/s    .L_dest01
         add    #3,r4
#endif

! Cleanup last few bytes
.L_cleanup:
        mov     r6,r0
        and     #3,r0
        tst     r0,r0
        bt      .L_exit
        mov     r0,r6

.L_cleanup_loop:
EX(     mov.b   @r5+,r0         )
        dt      r6
EX(     mov.b   r0,@r4          )
        bf/s    .L_cleanup_loop
         add    #1,r4

.L_exit:
        mov     #0,r0           ! normal return

5000:

# Exception handler:
.section .fixup, "ax"
```

```
6000:
        mov.l   8000f,r1
        mov     r3,r0
        jmp     @r1
         sub    r4,r0
        .align  2
8000:   .long   5000b

.previous
        mov.l   @r15+,r8
        mov.l   @r15+,r9
        mov.l   @r15+,r10
        rts
         mov.l  @r15+,r11
----------------------------------------------------------------------
linux/arch/sh/lib64/copy_page.S
----------------------------------------------------------------------
/*
   Copyright 2003 Richard Curnow, SuperH (UK) Ltd.

   This file is subject to the terms and conditions of the GNU General Public
   License.  See the file "COPYING" in the main directory of this archive
   for more details.

   Tight version of mempy for the case of just copying a page.
   Prefetch strategy empirically optimised against RTL simulations
   of SH5-101 cut2 eval chip with Cayman board DDR memory.

   Parameters:
   r2 : destination effective address (start of page)
   r3 : source effective address (start of page)

   Always copies 4096 bytes.

   Points to review.
   * Currently the prefetch is 4 lines ahead and the alloco is 2 lines ahead.
     It seems like the prefetch needs to be at at least 4 lines ahead to get
     the data into the cache in time, and the allocos contend with outstanding
     prefetches for the same cache set, so it's better to have the numbers
     different.
   */

        .section .text..SHmedia32,"ax"
        .little

        .balign 8
        .global copy_page
copy_page:

        /* Copy 4096 bytes worth of data from r3 to r2.
           Do prefetches 4 lines ahead.
           Do alloco 2 lines ahead */

        pta 1f, tr1
        pta 2f, tr2
        pta 3f, tr3
        ptabs r18, tr0

#if 0
```

```
        /* TAKum03020 */
        ld.q r3, 0x00, r63
        ld.q r3, 0x20, r63
        ld.q r3, 0x40, r63
        ld.q r3, 0x60, r63
#endif
        alloco r2, 0x00
        synco           ! TAKum03020
        alloco r2, 0x20
        synco           ! TAKum03020

        movi 3968, r6
        add  r2, r6, r6
        addi r6, 64, r7
        addi r7, 64, r8
        sub r3, r2, r60
        addi r60, 8, r61
        addi r61, 8, r62
        addi r62, 8, r23
        addi r60, 0x80, r22

/* Minimal code size.  The extra branches inside the loop don't cost much
   because they overlap with the time spent waiting for prefetches to
   complete. */
1:
#if 0
        /* TAKum03020 */
        bge/u r2, r6, tr2  ! skip prefetch for last 4 lines
        ldx.q r2, r22, r63 ! prefetch 4 lines hence
#endif
2:
        bge/u r2, r7, tr3  ! skip alloco for last 2 lines
        alloco r2, 0x40    ! alloc destination line 2 lines ahead
        synco           ! TAKum03020
3:
        ldx.q r2, r60, r36
        ldx.q r2, r61, r37
        ldx.q r2, r62, r38
        ldx.q r2, r23, r39
        st.q  r2,   0, r36
        st.q  r2,   8, r37
        st.q  r2,  16, r38
        st.q  r2,  24, r39
        addi r2, 32, r2
        bgt/l r8, r2, tr1

        blink tr0, r63     ! return
-----------------------------------------------------------------
linux/arch/sh/lib64/copy_user_memcpy.S
-----------------------------------------------------------------
! SPDX-License-Identifier: GPL-2.0
!
! Fast SH memcpy
!
! by Toshiyasu Morita (tm@netcom.com)
! hacked by J"orn Rernnecke (joern.rennecke@superh.com) ("o for o-umlaut)
! SH5 code Copyright 2002 SuperH Ltd.
!
! Entry: ARG0: destination pointer
```

```
!        ARG1: source pointer
!        ARG2: byte count
!
! Exit:  RESULT: destination pointer
!        any other registers in the range r0-r7: trashed
!
! Notes: Usually one wants to do small reads and write a longword, but
!        unfortunately it is difficult in some cases to concatanate bytes
!        into a longword on the SH, so this does a longword read and small
!        writes.
!
! This implementation makes two assumptions about how it is called:
!
! 1.: If the byte count is nonzero, the address of the last byte to be
!     copied is unsigned greater than the address of the first byte to
!     be copied.  This could be easily swapped for a signed comparison,
!     but the algorithm used needs some comparison.
!
! 2.: When there are two or three bytes in the last word of an 11-or-more
!     bytes memory chunk to b copied, the rest of the word can be read
!     without side effects.
!     This could be easily changed by increasing the minimum size of
!     a fast memcpy and the amount subtracted from r7 before L_2l_loop be 2,
!     however, this would cost a few extra cyles on average.
!     For SHmedia, the assumption is that any quadword can be read in its
!     enirety if at least one byte is included in the copy.

/* Imported into Linux kernel by Richard Curnow.  This is used to implement the
   __copy_user function in the general case, so it has to be a distinct
   function from intra-kernel memcpy to allow for exception fix-ups in the
   event that the user pointer is bad somewhere in the copy (e.g. due to
   running off the end of the vma).

   Note, this algorithm will be slightly wasteful in the case where the source
   and destination pointers are equally aligned, because the stlo/sthi pairs
   could then be merged back into single stores.  If there are a lot of cache
   misses, this is probably offset by the stall lengths on the preloads.

*/

/* NOTE : Prefetches removed and allocos guarded by synco to avoid TAKum03020
 * erratum.  The first two prefetches are nop-ed out to avoid upsetting the
 * instruction counts used in the jump address calculation.
 * */

        .section .text..SHmedia32,"ax"
        .little
        .balign 32
        .global copy_user_memcpy
        .global copy_user_memcpy_end
copy_user_memcpy:

#define LDUAQ(P,O,D0,D1) ldlo.q P,O,D0; ldhi.q P,O+7,D1
#define STUAQ(P,O,D0,D1) stlo.q P,O,D0; sthi.q P,O+7,D1
#define LDUAL(P,O,D0,D1) ldlo.l P,O,D0; ldhi.l P,O+3,D1
#define STUAL(P,O,D0,D1) stlo.l P,O,D0; sthi.l P,O+3,D1

        nop ! ld.b r3,0,r63 ! TAKum03020
        pta/l Large,tr0
```

```
        movi 25,r0
        bgeu/u r4,r0,tr0
        nsb r4,r0
        shlli r0,5,r0
        movi (L1-L0+63*32 + 1) & 0xffff,r1
        sub r1, r0, r0
L0:     ptrel r0,tr0
        add r2,r4,r5
        ptabs r18,tr1
        add r3,r4,r6
        blink tr0,r63

/* Rearranged to make cut2 safe */
        .balign 8
L4_7:   /* 4..7 byte memcpy cntd. */
        stlo.l r2, 0, r0
        or r6, r7, r6
        sthi.l r5, -1, r6
        stlo.l r5, -4, r6
        blink tr1,r63

        .balign 8
L1:     /* 0 byte memcpy */
        nop
        blink tr1,r63
        nop
        nop
        nop
        nop

L2_3:   /* 2 or 3 byte memcpy cntd. */
        st.b r5,-1,r6
        blink tr1,r63

        /* 1 byte memcpy */
        ld.b r3,0,r0
        st.b r2,0,r0
        blink tr1,r63

L8_15:  /* 8..15 byte memcpy cntd. */
        stlo.q r2, 0, r0
        or r6, r7, r6
        sthi.q r5, -1, r6
        stlo.q r5, -8, r6
        blink tr1,r63

        /* 2 or 3 byte memcpy */
        ld.b r3,0,r0
        nop ! ld.b r2,0,r63 ! TAKum03020
        ld.b r3,1,r1
        st.b r2,0,r0
        pta/l L2_3,tr0
        ld.b r6,-1,r6
        st.b r2,1,r1
        blink tr0, r63

        /* 4 .. 7 byte memcpy */
        LDUAL (r3, 0, r0, r1)
        pta L4_7, tr0
```

```
        ldlo.l r6, -4, r7
        or r0, r1, r0
        sthi.l r2, 3, r0
        ldhi.l r6, -1, r6
        blink tr0, r63

        /* 8 .. 15 byte memcpy */
        LDUAQ (r3, 0, r0, r1)
        pta L8_15, tr0
        ldlo.q r6, -8, r7
        or r0, r1, r0
        sthi.q r2, 7, r0
        ldhi.q r6, -1, r6
        blink tr0, r63

        /* 16 .. 24 byte memcpy */
        LDUAQ (r3, 0, r0, r1)
        LDUAQ (r3, 8, r8, r9)
        or r0, r1, r0
        sthi.q r2, 7, r0
        or r8, r9, r8
        sthi.q r2, 15, r8
        ldlo.q r6, -8, r7
        ldhi.q r6, -1, r6
        stlo.q r2, 8, r8
        stlo.q r2, 0, r0
        or r6, r7, r6
        sthi.q r5, -1, r6
        stlo.q r5, -8, r6
        blink tr1,r63

Large:
        ! ld.b r2, 0, r63 ! TAKum03020
        pta/l  Loop_ua, tr1
        ori r3, -8, r7
        sub r2, r7, r22
        sub r3, r2, r6
        add r2, r4, r5
        ldlo.q r3, 0, r0
        addi r5, -16, r5
        movi 64+8, r27 ! could subtract r7 from that.
        stlo.q r2, 0, r0
        sthi.q r2, 7, r0
        ldx.q r22, r6, r0
        bgtu/l r27, r4, tr1

        addi r5, -48, r27
        pta/l Loop_line, tr0
        addi r6, 64, r36
        addi r6, -24, r19
        addi r6, -16, r20
        addi r6, -8, r21

Loop_line:
        ! ldx.q r22, r36, r63 ! TAKum03020
        alloco r22, 32
        synco
        addi r22, 32, r22
        ldx.q r22, r19, r23
```

```
        sthi.q r22, -25, r0
        ldx.q r22, r20, r24
        ldx.q r22, r21, r25
        stlo.q r22, -32, r0
        ldx.q r22, r6,  r0
        sthi.q r22, -17, r23
        sthi.q r22,  -9, r24
        sthi.q r22,  -1, r25
        stlo.q r22, -24, r23
        stlo.q r22, -16, r24
        stlo.q r22,  -8, r25
        bgeu r27, r22, tr0

Loop_ua:
        addi r22, 8, r22
        sthi.q r22, -1, r0
        stlo.q r22, -8, r0
        ldx.q r22, r6, r0
        bgtu/l r5, r22, tr1

        add r3, r4, r7
        ldlo.q r7, -8, r1
        sthi.q r22, 7, r0
        ldhi.q r7, -1, r7
        ptabs r18,tr1
        stlo.q r22, 0, r0
        or r1, r7, r1
        sthi.q r5, 15, r1
        stlo.q r5, 8, r1
        blink tr1, r63
copy_user_memcpy_end:
        nop
----------------------------------------------------------------------
linux/arch/ia64/lib/copy_page.S
----------------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/*
 *
 * Optimized version of the standard copy_page() function
 *
 * Inputs:
 *      in0:    address of target page
 *      in1:    address of source page
 * Output:
 *      no return value
 *
 * Copyright (C) 1999, 2001 Hewlett-Packard Co
 *      Stephane Eranian <eranian@hpl.hp.com>
 *      David Mosberger <davidm@hpl.hp.com>
 *
 * 4/06/01 davidm       Tuned to make it perform well both for cached and uncached copies.
 */
#include <asm/asmmacro.h>
#include <asm/page.h>
#include <asm/export.h>

#define PIPE_DEPTH      3
#define EPI             p[PIPE_DEPTH-1]
```

```
#define lcount          r16
#define saved_pr        r17
#define saved_lc        r18
#define saved_pfs       r19
#define src1            r20
#define src2            r21
#define tgt1            r22
#define tgt2            r23
#define srcf            r24
#define tgtf            r25
#define tgt_last        r26

#define Nrot            ((8*PIPE_DEPTH+7)&~7)

GLOBAL_ENTRY(copy_page)
        .prologue
        .save ar.pfs, saved_pfs
        alloc saved_pfs=ar.pfs,3,Nrot-3,0,Nrot

        .rotr t1[PIPE_DEPTH], t2[PIPE_DEPTH], t3[PIPE_DEPTH], t4[PIPE_DEPTH], \
              t5[PIPE_DEPTH], t6[PIPE_DEPTH], t7[PIPE_DEPTH], t8[PIPE_DEPTH]
        .rotp p[PIPE_DEPTH]

        .save ar.lc, saved_lc
        mov saved_lc=ar.lc
        mov ar.ec=PIPE_DEPTH

        mov lcount=PAGE_SIZE/64-1
        .save pr, saved_pr
        mov saved_pr=pr
        mov pr.rot=1<<16

        .body

        mov src1=in1
        adds src2=8,in1
        mov tgt_last = PAGE_SIZE
        ;;
        adds tgt2=8,in0
        add srcf=512,in1
        mov ar.lc=lcount
        mov tgt1=in0
        add tgtf=512,in0
        add tgt_last = tgt_last, in0
        ;;
1:
(p[0])  ld8 t1[0]=[src1],16
(EPI)   st8 [tgt1]=t1[PIPE_DEPTH-1],16
(p[0])  ld8 t2[0]=[src2],16
(EPI)   st8 [tgt2]=t2[PIPE_DEPTH-1],16
        cmp.ltu p6,p0 = tgtf, tgt_last
        ;;
(p[0])  ld8 t3[0]=[src1],16
(EPI)   st8 [tgt1]=t3[PIPE_DEPTH-1],16
(p[0])  ld8 t4[0]=[src2],16
(EPI)   st8 [tgt2]=t4[PIPE_DEPTH-1],16
        ;;
(p[0])  ld8 t5[0]=[src1],16
(EPI)   st8 [tgt1]=t5[PIPE_DEPTH-1],16
```

```
(p[0])  ld8 t6[0]=[src2],16
(EPI)   st8 [tgt2]=t6[PIPE_DEPTH-1],16
        ;;
(p[0])  ld8 t7[0]=[src1],16
(EPI)   st8 [tgt1]=t7[PIPE_DEPTH-1],16
(p[0])  ld8 t8[0]=[src2],16
(EPI)   st8 [tgt2]=t8[PIPE_DEPTH-1],16

(p6)    lfetch [srcf], 64
(p6)    lfetch [tgtf], 64
        br.ctop.sptk.few 1b
        ;;
        mov pr=saved_pr,0xffffffffffff0000      // restore predicates
        mov ar.pfs=saved_pfs
        mov ar.lc=saved_lc
        br.ret.sptk.many rp
END(copy_page)
EXPORT_SYMBOL(copy_page)
------------------------------------------------------------------
linux/arch/ia64/lib/copy_page_mck.S
------------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/*
 * McKinley-optimized version of copy_page().
 *
 * Copyright (C) 2002 Hewlett-Packard Co
 *      David Mosberger <davidm@hpl.hp.com>
 *
 * Inputs:
 *      in0:    address of target page
 *      in1:    address of source page
 * Output:
 *      no return value
 *
 * General idea:
 *      - use regular loads and stores to prefetch data to avoid consuming M-slot just for
 *        lfetches => good for in-cache performance
 *      - avoid l2 bank-conflicts by not storing into the same 16-byte bank within a single
 *        cycle
 *
 * Principle of operation:
 *      First, note that L1 has a line-size of 64 bytes and L2 a line-size of 128 bytes.
 *      To avoid secondary misses in L2, we prefetch both source and destination with a line-size
 *      of 128 bytes.  When both of these lines are in the L2 and the first half of the
 *      source line is in L1, we start copying the remaining words.  The second half of the
 *      source line is prefetched in an earlier iteration, so that by the time we start
 *      accessing it, it's also present in the L1.
 *
 *      We use a software-pipelined loop to control the overall operation.  The pipeline
 *      has 2*PREFETCH_DIST+K stages.  The first PREFETCH_DIST stages are used for prefetching
 *      source cache-lines.  The second PREFETCH_DIST stages are used for prefetching destination
 *      cache-lines, the last K stages are used to copy the cache-line words not copied by
 *      the prefetches.  The four relevant points in the pipelined are called A, B, C, D:
 *      p[A] is TRUE if a source-line should be prefetched, p[B] is TRUE if a destination-line
 *      should be prefetched, p[C] is TRUE if the second half of an L2 line should be brought
 *      into L1D and p[D] is TRUE if a cacheline needs to be copied.
 *
 *      This all sounds very complicated, but thanks to the modulo-scheduled loop support,
 *      the resulting code is very regular and quite easy to follow (once you get the idea).
```

```
 *
 *      As a secondary optimization, the first 2*PREFETCH_DIST iterations are implemented
 *      as the separate .prefetch_loop.  Logically, this loop performs exactly like the
 *      main-loop (.line_copy), but has all known-to-be-predicated-off instructions removed,
 *      so that each loop iteration is faster (again, good for cached case).
 *
 *      When reading the code, it helps to keep the following picture in mind:
 *
 *             word 0 word 1
 *            +------+------+---
 *            | v[x] |  t1  | ^
 *            | t2   |  t3  | |
 *            | t4   |  t5  | |
 *            | t6   |  t7  | | 128 bytes
 *            | n[y] |  t9  | | (L2 cache line)
 *            | t10  |  t11 | |
 *            | t12  |  t13 | |
 *            | t14  |  t15 | v
 *            +------+------+---
 *
 *      Here, v[x] is copied by the (memory) prefetch.  n[y] is loaded at p[C]
 *      to fetch the second-half of the L2 cache line into L1, and the tX words are copied in
 *      an order that avoids bank conflicts.
 */
#include <asm/asmmacro.h>
#include <asm/page.h>
#include <asm/export.h>

#define PREFETCH_DIST   8               // McKinley sustains 16 outstanding L2 misses (8 ld, 8 st)

#define src0            r2
#define src1            r3
#define dst0            r9
#define dst1            r10
#define src_pre_mem     r11
#define dst_pre_mem     r14
#define src_pre_l2      r15
#define dst_pre_l2      r16
#define t1              r17
#define t2              r18
#define t3              r19
#define t4              r20
#define t5              t1      // alias!
#define t6              t2      // alias!
#define t7              t3      // alias!
#define t9              t5      // alias!
#define t10             t4      // alias!
#define t11             t7      // alias!
#define t12             t6      // alias!
#define t14             t10     // alias!
#define t13             r21
#define t15             r22

#define saved_lc        r23
#define saved_pr        r24

#define A       0
#define B       (PREFETCH_DIST)
#define C       (B + PREFETCH_DIST)
```

```
#define D       (C + 3)
#define N       (D + 1)
#define Nrot    ((N + 7) & ~7)

GLOBAL_ENTRY(copy_page)
        .prologue
        alloc r8 = ar.pfs, 2, Nrot-2, 0, Nrot

        .rotr v[2*PREFETCH_DIST], n[D-C+1]
        .rotp p[N]

        .save ar.lc, saved_lc
        mov saved_lc = ar.lc
        .save pr, saved_pr
        mov saved_pr = pr
        .body

        mov src_pre_mem = in1
        mov pr.rot = 0x10000
        mov ar.ec = 1                           // special unrolled loop

        mov dst_pre_mem = in0
        mov ar.lc = 2*PREFETCH_DIST - 1

        add src_pre_l2 = 8*8, in1
        add dst_pre_l2 = 8*8, in0
        add src0 = 8, in1                       // first t1 src
        add src1 = 3*8, in1                     // first t3 src
        add dst0 = 8, in0                       // first t1 dst
        add dst1 = 3*8, in0                     // first t3 dst
        mov t1 = (PAGE_SIZE/128) - (2*PREFETCH_DIST) - 1
        nop.m 0
        nop.i 0
        ;;
        // same as .line_copy loop, but with all predicated-off instructions removed:
.prefetch_loop:
(p[A])  ld8 v[A] = [src_pre_mem], 128           // M0
(p[B])  st8 [dst_pre_mem] = v[B], 128           // M2
        br.ctop.sptk .prefetch_loop
        ;;
        cmp.eq p16, p0 = r0, r0                 // reset p16 to 1 (br.ctop cleared it to zero)
        mov ar.lc = t1                          // with 64KB pages, t1 is too big to fit in 8 bits!
        mov ar.ec = N                           // # of stages in pipeline
        ;;
.line_copy:
(p[D])  ld8 t2 = [src0], 3*8                    // M0
(p[D])  ld8 t4 = [src1], 3*8                    // M1
(p[B])  st8 [dst_pre_mem] = v[B], 128           // M2 prefetch dst from memory
(p[D])  st8 [dst_pre_l2] = n[D-C], 128          // M3 prefetch dst from L2
        ;;
(p[A])  ld8 v[A] = [src_pre_mem], 128           // M0 prefetch src from memory
(p[C])  ld8 n[0] = [src_pre_l2], 128            // M1 prefetch src from L2
(p[D])  st8 [dst0] =  t1, 8                     // M2
(p[D])  st8 [dst1] =  t3, 8                     // M3
        ;;
(p[D])  ld8  t5 = [src0], 8
(p[D])  ld8  t7 = [src1], 3*8
(p[D])  st8 [dst0] =  t2, 3*8
(p[D])  st8 [dst1] =  t4, 3*8
```

```
        ;;
(p[D])  ld8  t6 = [src0], 3*8
(p[D])  ld8 t10 = [src1], 8
(p[D])  st8 [dst0] =  t5, 8
(p[D])  st8 [dst1] =  t7, 3*8
        ;;
(p[D])  ld8  t9 = [src0], 3*8
(p[D])  ld8 t11 = [src1], 3*8
(p[D])  st8 [dst0] =  t6, 3*8
(p[D])  st8 [dst1] = t10, 8
        ;;
(p[D])  ld8 t12 = [src0], 8
(p[D])  ld8 t14 = [src1], 8
(p[D])  st8 [dst0] =  t9, 3*8
(p[D])  st8 [dst1] = t11, 3*8
        ;;
(p[D])  ld8 t13 = [src0], 4*8
(p[D])  ld8 t15 = [src1], 4*8
(p[D])  st8 [dst0] = t12, 8
(p[D])  st8 [dst1] = t14, 8
        ;;
(p[D-1])ld8  t1 = [src0], 8
(p[D-1])ld8  t3 = [src1], 8
(p[D])  st8 [dst0] = t13, 4*8
(p[D])  st8 [dst1] = t15, 4*8
        br.ctop.sptk .line_copy
        ;;
        mov ar.lc = saved_lc
        mov pr = saved_pr, -1
        br.ret.sptk.many rp
END(copy_page)
EXPORT_SYMBOL(copy_page)
-----------------------------------------------------------------
linux/arch/ia64/lib/copy_user.S
-----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/*
 *
 * Optimized version of the copy_user() routine.
 * It is used to copy date across the kernel/user boundary.
 *
 * The source and destination are always on opposite side of
 * the boundary. When reading from user space we must catch
 * faults on loads. When writing to user space we must catch
 * errors on stores. Note that because of the nature of the copy
 * we don't need to worry about overlapping regions.
 *
 *
 * Inputs:
 *      in0     address of source buffer
 *      in1     address of destination buffer
 *      in2     number of bytes to copy
 *
 * Outputs:
 *      ret0    0 in case of success. The number of bytes NOT copied in
 *              case of error.
 *
 * Copyright (C) 2000-2001 Hewlett-Packard Co
 *      Stephane Eranian <eranian@hpl.hp.com>
```

```
 *
 * Fixme:
 *      - handle the case where we have more than 16 bytes and the alignment
 *        are different.
 *      - more benchmarking
 *      - fix extraneous stop bit introduced by the EX() macro.
 */

#include <asm/asmmacro.h>
#include <asm/export.h>

//
// Tuneable parameters
//
#define COPY_BREAK      16      // we do byte copy below (must be >=16)
#define PIPE_DEPTH      21      // pipe depth

#define EPI             p[PIPE_DEPTH-1]

//
// arguments
//
#define dst             in0
#define src             in1
#define len             in2

//
// local registers
//
#define t1              r2      // rshift in bytes
#define t2              r3      // lshift in bytes
#define rshift          r14     // right shift in bits
#define lshift          r15     // left shift in bits
#define word1           r16
#define word2           r17
#define cnt             r18
#define len2            r19
#define saved_lc        r20
#define saved_pr        r21
#define tmp             r22
#define val             r23
#define src1            r24
#define dst1            r25
#define src2            r26
#define dst2            r27
#define len1            r28
#define enddst          r29
#define endsrc          r30
#define saved_pfs       r31

GLOBAL_ENTRY(__copy_user)
        .prologue
        .save ar.pfs, saved_pfs
        alloc saved_pfs=ar.pfs,3,((2*PIPE_DEPTH+7)&~7),0,((2*PIPE_DEPTH+7)&~7)

        .rotr val1[PIPE_DEPTH],val2[PIPE_DEPTH]
        .rotp p[PIPE_DEPTH]

        adds len2=-1,len        // br.ctop is repeat/until
```

```
        mov ret0=r0

        ;;                      // RAW of cfm when len=0
        cmp.eq p8,p0=r0,len     // check for zero length
        .save ar.lc, saved_lc
        mov saved_lc=ar.lc      // preserve ar.lc (slow)
(p8)    br.ret.spnt.many rp     // empty mempcy()
        ;;
        add enddst=dst,len      // first byte after end of source
        add endsrc=src,len      // first byte after end of destination
        .save pr, saved_pr
        mov saved_pr=pr         // preserve predicates

        .body

        mov dst1=dst            // copy because of rotation
        mov ar.ec=PIPE_DEPTH
        mov pr.rot=1<<16        // p16=true all others are false

        mov src1=src            // copy because of rotation
        mov ar.lc=len2          // initialize lc for small count
        cmp.lt p10,p7=COPY_BREAK,len    // if len > COPY_BREAK then long copy

        xor tmp=src,dst         // same alignment test prepare
(p10)   br.cond.dptk .long_copy_user
        ;;                      // RAW pr.rot/p16 ?
        //
        // Now we do the byte by byte loop with software pipeline
        //
        // p7 is necessarily false by now
1:
        EX(.failure_in_pipe1,(p16) ld1 val1[0]=[src1],1)
        EX(.failure_out,(EPI) st1 [dst1]=val1[PIPE_DEPTH-1],1)
        br.ctop.dptk.few 1b
        ;;
        mov ar.lc=saved_lc
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.pfs=saved_pfs            // restore ar.ec
        br.ret.sptk.many rp             // end of short memcpy

        //
        // Not 8-byte aligned
        //
.diff_align_copy_user:
        // At this point we know we have more than 16 bytes to copy
        // and also that src and dest do _not_ have the same alignment.
        and src2=0x7,src1                               // src offset
        and dst2=0x7,dst1                               // dst offset
        ;;
        // The basic idea is that we copy byte-by-byte at the head so
        // that we can reach 8-byte alignment for both src1 and dst1.
        // Then copy the body using software pipelined 8-byte copy,
        // shifting the two back-to-back words right and left, then copy
        // the tail by copying byte-by-byte.
        //
        // Fault handling. If the byte-by-byte at the head fails on the
        // load, then restart and finish the pipleline by copying zeros
        // to the dst1. Then copy zeros for the rest of dst1.
        // If 8-byte software pipeline fails on the load, do the same as
```

```
        // failure_in3 does. If the byte-by-byte at the tail fails, it is
        // handled simply by failure_in_pipe1.
        //
        // The case p14 represents the source has more bytes in the
        // the first word (by the shifted part), whereas the p15 needs to
        // copy some bytes from the 2nd word of the source that has the
        // tail of the 1st of the destination.
        //

        //
        // Optimization. If dst1 is 8-byte aligned (quite common), we don't need
        // to copy the head to dst1, to start 8-byte copy software pipeline.
        // We know src1 is not 8-byte aligned in this case.
        //
        cmp.eq p14,p15=r0,dst2
(p15)   br.cond.spnt 1f
        ;;
        sub t1=8,src2
        mov t2=src2
        ;;
        shl rshift=t2,3
        sub len1=len,t1                                 // set len1
        ;;
        sub lshift=64,rshift
        ;;
        br.cond.spnt .word_copy_user
        ;;
1:
        cmp.leu p14,p15=src2,dst2
        sub t1=dst2,src2
        ;;
        .pred.rel "mutex", p14, p15
(p14)   sub word1=8,src2                                // (8 - src offset)
(p15)   sub t1=r0,t1                                    // absolute value
(p15)   sub word1=8,dst2                                // (8 - dst offset)
        ;;
        // For the case p14, we don't need to copy the shifted part to
        // the 1st word of destination.
        sub t2=8,t1
(p14)   sub word1=word1,t1
        ;;
        sub len1=len,word1                              // resulting len
(p15)   shl rshift=t1,3                                 // in bits
(p14)   shl rshift=t2,3
        ;;
(p14)   sub len1=len1,t1
        adds cnt=-1,word1
        ;;
        sub lshift=64,rshift
        mov ar.ec=PIPE_DEPTH
        mov pr.rot=1<<16        // p16=true all others are false
        mov ar.lc=cnt
        ;;
2:
        EX(.failure_in_pipe2,(p16) ld1 val1[0]=[src1],1)
        EX(.failure_out,(EPI) st1 [dst1]=val1[PIPE_DEPTH-1],1)
        br.ctop.dptk.few 2b
        ;;
        clrrrb
```

```
        ;;
.word_copy_user:
        cmp.gtu p9,p0=16,len1
(p9)    br.cond.spnt 4f                 // if (16 > len1) skip 8-byte copy
        ;;
        shr.u cnt=len1,3                // number of 64-bit words
        ;;
        adds cnt=-1,cnt
        ;;
        .pred.rel "mutex", p14, p15
(p14)   sub src1=src1,t2
(p15)   sub src1=src1,t1
        //
        // Now both src1 and dst1 point to an 8-byte aligned address. And
        // we have more than 8 bytes to copy.
        //
        mov ar.lc=cnt
        mov ar.ec=PIPE_DEPTH
        mov pr.rot=1<<16        // p16=true all others are false
        ;;
3:
        //
        // The pipleline consists of 3 stages:
        // 1 (p16):     Load a word from src1
        // 2 (EPI_1):   Shift right pair, saving to tmp
        // 3 (EPI):     Store tmp to dst1
        //
        // To make it simple, use at least 2 (p16) loops to set up val1[n]
        // because we need 2 back-to-back val1[] to get tmp.
        // Note that this implies EPI_2 must be p18 or greater.
        //

#define EPI_1           p[PIPE_DEPTH-2]
#define SWITCH(pred, shift)     cmp.eq pred,p0=shift,rshift
#define CASE(pred, shift)       \
        (pred)  br.cond.spnt .copy_user_bit##shift
#define BODY(rshift)                                                    \
.copy_user_bit##rshift:                                                 \
1:                                                                      \
        EX(.failure_out,(EPI) st8 [dst1]=tmp,8);                        \
(EPI_1) shrp tmp=val1[PIPE_DEPTH-2],val1[PIPE_DEPTH-1],rshift;  \
        EX(3f,(p16) ld8 val1[1]=[src1],8);                      \
(p16)   mov val1[0]=r0;                                                 \
        br.ctop.dptk 1b;                                                \
        ;;                                                              \
        br.cond.sptk.many .diff_align_do_tail;                  \
2:                                                                      \
(EPI)   st8 [dst1]=tmp,8;                                               \
(EPI_1) shrp tmp=val1[PIPE_DEPTH-2],val1[PIPE_DEPTH-1],rshift;  \
3:                                                                      \
(p16)   mov val1[1]=r0;                                                 \
(p16)   mov val1[0]=r0;                                                 \
        br.ctop.dptk 2b;                                                \
        ;;                                                              \
        br.cond.sptk.many .failure_in2

        //
        // Since the instruction 'shrp' requires a fixed 128-bit value
        // specifying the bits to shift, we need to provide 7 cases
```

```
        // below.
        //
        SWITCH(p6, 8)
        SWITCH(p7, 16)
        SWITCH(p8, 24)
        SWITCH(p9, 32)
        SWITCH(p10, 40)
        SWITCH(p11, 48)
        SWITCH(p12, 56)
        ;;
        CASE(p6, 8)
        CASE(p7, 16)
        CASE(p8, 24)
        CASE(p9, 32)
        CASE(p10, 40)
        CASE(p11, 48)
        CASE(p12, 56)
        ;;
        BODY(8)
        BODY(16)
        BODY(24)
        BODY(32)
        BODY(40)
        BODY(48)
        BODY(56)
        ;;
.diff_align_do_tail:
        .pred.rel "mutex", p14, p15
(p14)   sub src1=src1,t1
(p14)   adds dst1=-8,dst1
(p15)   sub dst1=dst1,t1
        ;;
4:
        // Tail correction.
        //
        // The problem with this piplelined loop is that the last word is not
        // loaded and thus parf of the last word written is not correct.
        // To fix that, we simply copy the tail byte by byte.

        sub len1=endsrc,src1,1
        clrrrb
        ;;
        mov ar.ec=PIPE_DEPTH
        mov pr.rot=1<<16        // p16=true all others are false
        mov ar.lc=len1
        ;;
5:
        EX(.failure_in_pipe1,(p16) ld1 val1[0]=[src1],1)
        EX(.failure_out,(EPI) st1 [dst1]=val1[PIPE_DEPTH-1],1)
        br.ctop.dptk.few 5b
        ;;
        mov ar.lc=saved_lc
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.pfs=saved_pfs
        br.ret.sptk.many rp

        //
        // Beginning of long mempcy (i.e. > 16 bytes)
        //
```

```
.long_copy_user:
        tbit.nz p6,p7=src1,0    // odd alignment
        and tmp=7,tmp
        ;;
        cmp.eq p10,p8=r0,tmp
        mov len1=len            // copy because of rotation
(p8)    br.cond.dpnt .diff_align_copy_user
        ;;
        // At this point we know we have more than 16 bytes to copy
        // and also that both src and dest have the same alignment
        // which may not be the one we want. So for now we must move
        // forward slowly until we reach 16byte alignment: no need to
        // worry about reaching the end of buffer.
        //
        EX(.failure_in1,(p6) ld1 val1[0]=[src1],1)      // 1-byte aligned
(p6)    adds len1=-1,len1;;
        tbit.nz p7,p0=src1,1
        ;;
        EX(.failure_in1,(p7) ld2 val1[1]=[src1],2)      // 2-byte aligned
(p7)    adds len1=-2,len1;;
        tbit.nz p8,p0=src1,2
        ;;
        //
        // Stop bit not required after ld4 because if we fail on ld4
        // we have never executed the ld1, therefore st1 is not executed.
        //
        EX(.failure_in1,(p8) ld4 val2[0]=[src1],4)      // 4-byte aligned
        ;;
        EX(.failure_out,(p6) st1 [dst1]=val1[0],1)
        tbit.nz p9,p0=src1,3
        ;;
        //
        // Stop bit not required after ld8 because if we fail on ld8
        // we have never executed the ld2, therefore st2 is not executed.
        //
        EX(.failure_in1,(p9) ld8 val2[1]=[src1],8)      // 8-byte aligned
        EX(.failure_out,(p7) st2 [dst1]=val1[1],2)
(p8)    adds len1=-4,len1
        ;;
        EX(.failure_out, (p8) st4 [dst1]=val2[0],4)
(p9)    adds len1=-8,len1;;
        shr.u cnt=len1,4                // number of 128-bit (2x64bit) words
        ;;
        EX(.failure_out, (p9) st8 [dst1]=val2[1],8)
        tbit.nz p6,p0=len1,3
        cmp.eq p7,p0=r0,cnt
        adds tmp=-1,cnt                 // br.ctop is repeat/until
(p7)    br.cond.dpnt .dotail            // we have less than 16 bytes left
        ;;
        adds src2=8,src1
        adds dst2=8,dst1
        mov ar.lc=tmp
        ;;
        //
        // 16bytes/iteration
        //
2:
        EX(.failure_in3,(p16) ld8 val1[0]=[src1],16)
(p16)   ld8 val2[0]=[src2],16
```

```
        EX(.failure_out, (EPI)  st8 [dst1]=val1[PIPE_DEPTH-1],16)
(EPI)   st8 [dst2]=val2[PIPE_DEPTH-1],16
        br.ctop.dptk 2b
        ;;                      // RAW on src1 when fall through from loop
        //
        // Tail correction based on len only
        //
        // No matter where we come from (loop or test) the src1 pointer
        // is 16 byte aligned AND we have less than 16 bytes to copy.
        //
.dotail:
        EX(.failure_in1,(p6) ld8 val1[0]=[src1],8)      // at least 8 bytes
        tbit.nz p7,p0=len1,2
        ;;
        EX(.failure_in1,(p7) ld4 val1[1]=[src1],4)      // at least 4 bytes
        tbit.nz p8,p0=len1,1
        ;;
        EX(.failure_in1,(p8) ld2 val2[0]=[src1],2)      // at least 2 bytes
        tbit.nz p9,p0=len1,0
        ;;
        EX(.failure_out, (p6) st8 [dst1]=val1[0],8)
        ;;
        EX(.failure_in1,(p9) ld1 val2[1]=[src1])        // only 1 byte left
        mov ar.lc=saved_lc
        ;;
        EX(.failure_out,(p7) st4 [dst1]=val1[1],4)
        mov pr=saved_pr,0xffffffffffff0000
        ;;
        EX(.failure_out, (p8)   st2 [dst1]=val2[0],2)
        mov ar.pfs=saved_pfs
        ;;
        EX(.failure_out, (p9)   st1 [dst1]=val2[1])
        br.ret.sptk.many rp


        //
        // Here we handle the case where the byte by byte copy fails
        // on the load.
        // Several factors make the zeroing of the rest of the buffer kind of
        // tricky:
        //      - the pipeline: loads/stores are not in sync (pipeline)
        //
        //        In the same loop iteration, the dst1 pointer does not directly
        //        reflect where the faulty load was.
        //
        //      - pipeline effect
        //        When you get a fault on load, you may have valid data from
        //        previous loads not yet store in transit. Such data must be
        //        store normally before moving onto zeroing the rest.
        //
        //      - single/multi dispersal independence.
        //
        // solution:
        //      - we don't disrupt the pipeline, i.e. data in transit in
        //        the software pipeline will be eventually move to memory.
        //        We simply replace the load with a simple mov and keep the
        //        pipeline going. We can't really do this inline because
        //        p16 is always reset to 1 when lc > 0.
```

```
        //
.failure_in_pipe1:
        sub ret0=endsrc,src1    // number of bytes to zero, i.e. not copied
1:
(p16)   mov val1[0]=r0
(EPI)   st1 [dst1]=val1[PIPE_DEPTH-1],1
        br.ctop.dptk 1b
        ;;
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.lc=saved_lc
        mov ar.pfs=saved_pfs
        br.ret.sptk.many rp

        //
        // This is the case where the byte by byte copy fails on the load
        // when we copy the head. We need to finish the pipeline and copy
        // zeros for the rest of the destination. Since this happens
        // at the top we still need to fill the body and tail.
.failure_in_pipe2:
        sub ret0=endsrc,src1    // number of bytes to zero, i.e. not copied
2:
(p16)   mov val1[0]=r0
(EPI)   st1 [dst1]=val1[PIPE_DEPTH-1],1
        br.ctop.dptk 2b
        ;;
        sub len=enddst,dst1,1           // precompute len
        br.cond.dptk.many .failure_in1bis
        ;;

        //
        // Here we handle the head & tail part when we check for alignment.
        // The following code handles only the load failures. The
        // main diffculty comes from the fact that loads/stores are
        // scheduled. So when you fail on a load, the stores corresponding
        // to previous successful loads must be executed.
        //
        // However some simplifications are possible given the way
        // things work.
        //
        // 1) HEAD
        // Theory of operation:
        //
        //  Page A   | Page B
        //  ---------|-----
        //          1|8 x
        //        1 2|8 x
        //          4|8 x
        //        1 4|8 x
        //        2 4|8 x
        //      1 2 4|8 x
        //           |1
        //           |2 x
        //           |4 x
        //
        // page_size >= 4k (2^12).  (x means 4, 2, 1)
        // Here we suppose Page A exists and Page B does not.
        //
        // As we move towards eight byte alignment we may encounter faults.
        // The numbers on each page show the size of the load (current alignment).
```

```
        //
        // Key point:
        //      - if you fail on 1, 2, 4 then you have never executed any smaller
        //        size loads, e.g. failing ld4 means no ld1 nor ld2 executed
        //        before.
        //
        // This allows us to simplify the cleanup code, because basically you
        // only have to worry about "pending" stores in the case of a failing
        // ld8(). Given the way the code is written today, this means only
        // worry about st2, st4. There we can use the information encapsulated
        // into the predicates.
        //
        // Other key point:
        //      - if you fail on the ld8 in the head, it means you went straight
        //        to it, i.e. 8byte alignment within an unexisting page.
        // Again this comes from the fact that if you crossed just for the ld8 then
        // you are 8byte aligned but also 16byte align, therefore you would
        // either go for the 16byte copy loop OR the ld8 in the tail part.
        // The combination ld1, ld2, ld4, ld8 where you fail on ld8 is impossible
        // because it would mean you had 15bytes to copy in which case you
        // would have defaulted to the byte by byte copy.
        //
        //
        // 2) TAIL
        // Here we now we have less than 16 bytes AND we are either 8 or 16 byte
        // aligned.
        //
        // Key point:
        // This means that we either:
        //              - are right on a page boundary
        //      OR
        //              - are at more than 16 bytes from a page boundary with
        //                at most 15 bytes to copy: no chance of crossing.
        //
        // This allows us to assume that if we fail on a load we haven't possibly
        // executed any of the previous (tail) ones, so we don't need to do
        // any stores. For instance, if we fail on ld2, this means we had
        // 2 or 3 bytes left to copy and we did not execute the ld8 nor ld4.
        //
        // This means that we are in a situation similar the a fault in the
        // head part. That's nice!
        //
.failure_in1:
        sub ret0=endsrc,src1    // number of bytes to zero, i.e. not copied
        sub len=endsrc,src1,1
        //
        // we know that ret0 can never be zero at this point
        // because we failed why trying to do a load, i.e. there is still
        // some work to do.
        // The failure_in1bis and length problem is taken care of at the
        // calling side.
        //
        ;;
.failure_in1bis:                // from (.failure_in3)
        mov ar.lc=len           // Continue with a stupid byte store.
        ;;
5:
        st1 [dst1]=r0,1
        br.cloop.dptk 5b
```

```
        ;;
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.lc=saved_lc
        mov ar.pfs=saved_pfs
        br.ret.sptk.many rp

        //
        // Here we simply restart the loop but instead
        // of doing loads we fill the pipeline with zeroes
        // We can't simply store r0 because we may have valid
        // data in transit in the pipeline.
        // ar.lc and ar.ec are setup correctly at this point
        //
        // we MUST use src1/endsrc here and not dst1/enddst because
        // of the pipeline effect.
        //
.failure_in3:
        sub ret0=endsrc,src1    // number of bytes to zero, i.e. not copied
        ;;
2:
(p16)   mov val1[0]=r0
(p16)   mov val2[0]=r0
(EPI)   st8 [dst1]=val1[PIPE_DEPTH-1],16
(EPI)   st8 [dst2]=val2[PIPE_DEPTH-1],16
        br.ctop.dptk 2b
        ;;
        cmp.ne p6,p0=dst1,enddst        // Do we need to finish the tail ?
        sub len=enddst,dst1,1           // precompute len
(p6)    br.cond.dptk .failure_in1bis
        ;;
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.lc=saved_lc
        mov ar.pfs=saved_pfs
        br.ret.sptk.many rp

.failure_in2:
        sub ret0=endsrc,src1
        cmp.ne p6,p0=dst1,enddst        // Do we need to finish the tail ?
        sub len=enddst,dst1,1           // precompute len
(p6)    br.cond.dptk .failure_in1bis
        ;;
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.lc=saved_lc
        mov ar.pfs=saved_pfs
        br.ret.sptk.many rp

        //
        // handling of failures on stores: that's the easy part
        //
.failure_out:
        sub ret0=enddst,dst1
        mov pr=saved_pr,0xffffffffffff0000
        mov ar.lc=saved_lc

        mov ar.pfs=saved_pfs
        br.ret.sptk.many rp
END(__copy_user)
EXPORT_SYMBOL(__copy_user)
-----------------------------------------------------------------------
```

```
linux/arch/arm/lib/copy_page.S
------------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copypage.S
 *
 *  Copyright (C) 1995-1999 Russell King
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 *  ASM optimised string functions
 */
#include <linux/linkage.h>
#include <asm/assembler.h>
#include <asm/asm-offsets.h>
#include <asm/cache.h>

#define COPY_COUNT (PAGE_SZ / (2 * L1_CACHE_BYTES) PLD( -1 ))

                .text
                .align  5
/*
 * StrongARM optimised copy_page routine
 * now 1.78bytes/cycle, was 1.60 bytes/cycle (50MHz bus -> 89MB/s)
 * Note that we probably achieve closer to the 100MB/s target with
 * the core clock switching.
 */
ENTRY(copy_page)
                stmfd   sp!, {r4, lr}                   @       2
        PLD(    pld     [r1, #0]                )
        PLD(    pld     [r1, #L1_CACHE_BYTES]           )
                mov     r2, #COPY_COUNT                 @       1
                ldmia   r1!, {r3, r4, ip, lr}           @       4+1
1:      PLD(    pld     [r1, #2 * L1_CACHE_BYTES])
        PLD(    pld     [r1, #3 * L1_CACHE_BYTES])
2:
        .rept   (2 * L1_CACHE_BYTES / 16 - 1)
                stmia   r0!, {r3, r4, ip, lr}           @       4
                ldmia   r1!, {r3, r4, ip, lr}           @       4
        .endr
                subs    r2, r2, #1                      @       1
                stmia   r0!, {r3, r4, ip, lr}           @       4
                ldmgtia r1!, {r3, r4, ip, lr}           @       4
                bgt     1b                              @       1
        PLD(    ldmeqia r1!, {r3, r4, ip, lr}   )
        PLD(    beq     2b                      )
                ldmfd   sp!, {r4, pc}                   @       3
ENDPROC(copy_page)
------------------------------------------------------------------
linux/arch/arm/lib/copy_from_user.S
------------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copy_from_user.S
 *
 *  Author:     Nicolas Pitre
 *  Created:    Sep 29, 2005
 *  Copyright:  MontaVista Software, Inc.
 *
```

```
 *  This program is free software; you can redistribute it and/or modify
 *  it under the terms of the GNU General Public License version 2 as
 *  published by the Free Software Foundation.
 */

#include <linux/linkage.h>
#include <asm/assembler.h>
#include <asm/unwind.h>

/*
 * Prototype:
 *
 *      size_t arm_copy_from_user(void *to, const void *from, size_t n)
 *
 * Purpose:
 *
 *      copy a block to kernel memory from user memory
 *
 * Params:
 *
 *      to = kernel memory
 *      from = user memory
 *      n = number of bytes to copy
 *
 * Return value:
 *
 *      Number of bytes NOT copied.
 */

#ifndef CONFIG_THUMB2_KERNEL
#define LDR1W_SHIFT     0
#else
#define LDR1W_SHIFT     1
#endif
#define STR1W_SHIFT     0

        .macro ldr1w ptr reg abort
        ldrusr  \reg, \ptr, 4, abort=\abort
        .endm

        .macro ldr4w ptr reg1 reg2 reg3 reg4 abort
        ldr1w \ptr, \reg1, \abort
        ldr1w \ptr, \reg2, \abort
        ldr1w \ptr, \reg3, \abort
        ldr1w \ptr, \reg4, \abort
        .endm

        .macro ldr8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
        ldr4w \ptr, \reg1, \reg2, \reg3, \reg4, \abort
        ldr4w \ptr, \reg5, \reg6, \reg7, \reg8, \abort
        .endm

        .macro ldr1b ptr reg cond=al abort
        ldrusr  \reg, \ptr, 1, \cond, abort=\abort
        .endm

        .macro str1w ptr reg abort
        W(str) \reg, [\ptr], #4
        .endm
```

```
        .macro str8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
        stmia \ptr!, {\reg1, \reg2, \reg3, \reg4, \reg5, \reg6, \reg7, \reg8}
        .endm

        .macro str1b ptr reg cond=al abort
        str\cond\()b \reg, [\ptr], #1
        .endm

        .macro enter reg1 reg2
        mov     r3, #0
        stmdb   sp!, {r0, r2, r3, \reg1, \reg2}
        .endm

        .macro usave reg1 reg2
        UNWIND( .save {r0, r2, r3, \reg1, \reg2}        )
        .endm

        .macro exit reg1 reg2
        add     sp, sp, #8
        ldmfd   sp!, {r0, \reg1, \reg2}
        .endm

        .text

ENTRY(arm_copy_from_user)

#include "copy_template.S"

ENDPROC(arm_copy_from_user)

        .pushsection .fixup,"ax"
        .align 0
        copy_abort_preamble
        ldmfd   sp!, {r1, r2, r3}
        sub     r0, r0, r1
        rsb     r0, r0, r2
        copy_abort_end
        .popsection

------------------------------------------------------------------
linux/arch/arm/lib/copy_to_user.S
------------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copy_to_user.S
 *
 *  Author:     Nicolas Pitre
 *  Created:    Sep 29, 2005
 *  Copyright:  MontaVista Software, Inc.
 *
 *  This program is free software; you can redistribute it and/or modify
 *  it under the terms of the GNU General Public License version 2 as
 *  published by the Free Software Foundation.
 */

#include <linux/linkage.h>
#include <asm/assembler.h>
#include <asm/unwind.h>
```

```
/*
 * Prototype:
 *
 *      size_t arm_copy_to_user(void *to, const void *from, size_t n)
 *
 * Purpose:
 *
 *      copy a block to user memory from kernel memory
 *
 * Params:
 *
 *      to = user memory
 *      from = kernel memory
 *      n = number of bytes to copy
 *
 * Return value:
 *
 *      Number of bytes NOT copied.
 */

#define LDR1W_SHIFT     0
#ifndef CONFIG_THUMB2_KERNEL
#define STR1W_SHIFT     0
#else
#define STR1W_SHIFT     1
#endif

        .macro ldr1w ptr reg abort
        W(ldr) \reg, [\ptr], #4
        .endm

        .macro ldr4w ptr reg1 reg2 reg3 reg4 abort
        ldmia \ptr!, {\reg1, \reg2, \reg3, \reg4}
        .endm

        .macro ldr8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
        ldmia \ptr!, {\reg1, \reg2, \reg3, \reg4, \reg5, \reg6, \reg7, \reg8}
        .endm

        .macro ldr1b ptr reg cond=al abort
        ldr\cond\()b \reg, [\ptr], #1
        .endm

        .macro str1w ptr reg abort
        strusr  \reg, \ptr, 4, abort=\abort
        .endm

        .macro str8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
        str1w \ptr, \reg1, \abort
        str1w \ptr, \reg2, \abort
        str1w \ptr, \reg3, \abort
        str1w \ptr, \reg4, \abort
        str1w \ptr, \reg5, \abort
        str1w \ptr, \reg6, \abort
        str1w \ptr, \reg7, \abort
        str1w \ptr, \reg8, \abort
        .endm

        .macro str1b ptr reg cond=al abort
```

```
        strusr  \reg, \ptr, 1, \cond, abort=\abort
        .endm

        .macro enter reg1 reg2
        mov     r3, #0
        stmdb   sp!, {r0, r2, r3, \reg1, \reg2}
        .endm

        .macro usave reg1 reg2
        UNWIND( .save {r0, r2, r3, \reg1, \reg2}        )
        .endm

        .macro exit reg1 reg2
        add     sp, sp, #8
        ldmfd   sp!, {r0, \reg1, \reg2}
        .endm

        .text

ENTRY(__copy_to_user_std)
WEAK(arm_copy_to_user)

#include "copy_template.S"

ENDPROC(arm_copy_to_user)
ENDPROC(__copy_to_user_std)

        .pushsection .text.fixup,"ax"
        .align 0
        copy_abort_preamble
        ldmfd   sp!, {r1, r2, r3}
        sub     r0, r0, r1
        rsb     r0, r0, r2
        copy_abort_end
        .popsection

------------------------------------------------------------------
linux/arch/arm/lib/copy_template.S
------------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copy_template.s
 *
 *  Code template for optimized memory copy functions
 *
 *  Author:     Nicolas Pitre
 *  Created:    Sep 28, 2005
 *  Copyright:  MontaVista Software, Inc.
 *
 *  This program is free software; you can redistribute it and/or modify
 *  it under the terms of the GNU General Public License version 2 as
 *  published by the Free Software Foundation.
 */

/*
 * Theory of operation
 * -------------------
 *
 * This file provides the core code for a forward memory copy used in
 * the implementation of memcopy(), copy_to_user() and copy_from_user().
```

```
*
* The including file must define the following accessor macros
* according to the need of the given function:
*
* ldr1w ptr reg abort
*
*      This loads one word from 'ptr', stores it in 'reg' and increments
*      'ptr' to the next word. The 'abort' argument is used for fixup tables.
*
* ldr4w ptr reg1 reg2 reg3 reg4 abort
* ldr8w ptr, reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
*
*      This loads four or eight words starting from 'ptr', stores them
*      in provided registers and increments 'ptr' past those words.
*      The'abort' argument is used for fixup tables.
*
* ldr1b ptr reg cond abort
*
*      Similar to ldr1w, but it loads a byte and increments 'ptr' one byte.
*      It also must apply the condition code if provided, otherwise the
*      "al" condition is assumed by default.
*
* str1w ptr reg abort
* str8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
* str1b ptr reg cond abort
*
*      Same as their ldr* counterparts, but data is stored to 'ptr' location
*      rather than being loaded.
*
* enter reg1 reg2
*
*      Preserve the provided registers on the stack plus any additional
*      data as needed by the implementation including this code. Called
*      upon code entry.
*
* usave reg1 reg2
*
*      Unwind annotation macro is corresponding for 'enter' macro.
*      It tell unwinder that preserved some provided registers on the stack
*      and additional data by a prior 'enter' macro.
*
* exit reg1 reg2
*
*      Restore registers with the values previously saved with the
*      'preserv' macro. Called upon code termination.
*
* LDR1W_SHIFT
* STR1W_SHIFT
*
*      Correction to be applied to the "ip" register when branching into
*      the ldr1w or str1w instructions (some of these macros may expand to
*      than one 32bit instruction in Thumb-2)
*/


       UNWIND( .fnstart                        )
               enter   r4, lr
       UNWIND( .fnend                          )
```

```
        UNWIND( .fnstart                        )
                usave   r4, lr                    @ in first stmdb block

                subs    r2, r2, #4
                blt     8f
                ands    ip, r0, #3
        PLD(    pld     [r1, #0]                )
                bne     9f
                ands    ip, r1, #3
                bne     10f

1:              subs    r2, r2, #(28)
                stmfd   sp!, {r5 - r8}
        UNWIND( .fnend                          )

        UNWIND( .fnstart                        )
                usave   r4, lr
        UNWIND( .save   {r5 - r8}               ) @ in second stmfd block
                blt     5f

        CALGN(  ands    ip, r0, #31             )
        CALGN(  rsb     r3, ip, #32             )
        CALGN(  sbcnes  r4, r3, r2              )  @ C is always set here
        CALGN(  bcs     2f                      )
        CALGN(  adr     r4, 6f                  )
        CALGN(  subs    r2, r2, r3              )  @ C gets set
        CALGN(  add     pc, r4, ip              )

        PLD(    pld     [r1, #0]                )
2:      PLD(    subs    r2, r2, #96             )
        PLD(    pld     [r1, #28]               )
        PLD(    blt     4f                      )
        PLD(    pld     [r1, #60]               )
        PLD(    pld     [r1, #92]               )

3:      PLD(    pld     [r1, #124]              )
4:              ldr8w   r1, r3, r4, r5, r6, r7, r8, ip, lr, abort=20f
                subs    r2, r2, #32
                str8w   r0, r3, r4, r5, r6, r7, r8, ip, lr, abort=20f
                bge     3b
        PLD(    cmn     r2, #96                 )
        PLD(    bge     4b                      )

5:              ands    ip, r2, #28
                rsb     ip, ip, #32
#if LDR1W_SHIFT > 0
                lsl     ip, ip, #LDR1W_SHIFT
#endif
                addne   pc, pc, ip              @ C is always clear here
                b       7f
6:
                .rept   (1 << LDR1W_SHIFT)
                W(nop)
                .endr
                ldr1w   r1, r3, abort=20f
                ldr1w   r1, r4, abort=20f
                ldr1w   r1, r5, abort=20f
                ldr1w   r1, r6, abort=20f
                ldr1w   r1, r7, abort=20f
```

```
                ldr1w   r1, r8, abort=20f
                ldr1w   r1, lr, abort=20f

#if LDR1W_SHIFT < STR1W_SHIFT
                lsl     ip, ip, #STR1W_SHIFT - LDR1W_SHIFT
#elif LDR1W_SHIFT > STR1W_SHIFT
                lsr     ip, ip, #LDR1W_SHIFT - STR1W_SHIFT
#endif
                add     pc, pc, ip
                nop
                .rept   (1 << STR1W_SHIFT)
                W(nop)
                .endr
                str1w   r0, r3, abort=20f
                str1w   r0, r4, abort=20f
                str1w   r0, r5, abort=20f
                str1w   r0, r6, abort=20f
                str1w   r0, r7, abort=20f
                str1w   r0, r8, abort=20f
                str1w   r0, lr, abort=20f

        CALGN(  bcs     2b                      )

7:              ldmfd   sp!, {r5 - r8}
        UNWIND( .fnend                          ) @ end of second stmfd block

        UNWIND( .fnstart                        )
                usave   r4, lr                    @ still in first stmdb block
8:              movs    r2, r2, lsl #31
                ldr1b   r1, r3, ne, abort=21f
                ldr1b   r1, r4, cs, abort=21f
                ldr1b   r1, ip, cs, abort=21f
                str1b   r0, r3, ne, abort=21f
                str1b   r0, r4, cs, abort=21f
                str1b   r0, ip, cs, abort=21f

                exit    r4, pc

9:              rsb     ip, ip, #4
                cmp     ip, #2
                ldr1b   r1, r3, gt, abort=21f
                ldr1b   r1, r4, ge, abort=21f
                ldr1b   r1, lr, abort=21f
                str1b   r0, r3, gt, abort=21f
                str1b   r0, r4, ge, abort=21f
                subs    r2, r2, ip
                str1b   r0, lr, abort=21f
                blt     8b
                ands    ip, r1, #3
                beq     1b

10:             bic     r1, r1, #3
                cmp     ip, #2
                ldr1w   r1, lr, abort=21f
                beq     17f
                bgt     18f
        UNWIND( .fnend                          )
```

```
                .macro  forward_copy_shift pull push

        UNWIND( .fnstart                        )
                usave   r4, lr                    @ still in first stmdb block
                subs    r2, r2, #28
                blt     14f

        CALGN(  ands    ip, r0, #31             )
        CALGN(  rsb     ip, ip, #32             )
        CALGN(  sbcnes  r4, ip, r2              )  @ C is always set here
        CALGN(  subcc   r2, r2, ip              )
        CALGN(  bcc     15f                     )

11:             stmfd   sp!, {r5 - r9}
        UNWIND( .fnend                          )

        UNWIND( .fnstart                        )
                usave   r4, lr
        UNWIND( .save   {r5 - r9}               ) @ in new second stmfd block
        PLD(    pld     [r1, #0]                )
        PLD(    subs    r2, r2, #96             )
        PLD(    pld     [r1, #28]               )
        PLD(    blt     13f                     )
        PLD(    pld     [r1, #60]               )
        PLD(    pld     [r1, #92]               )

12:     PLD(    pld     [r1, #124]              )
13:             ldr4w   r1, r4, r5, r6, r7, abort=19f
                mov     r3, lr, lspull #\pull
                subs    r2, r2, #32
                ldr4w   r1, r8, r9, ip, lr, abort=19f
                orr     r3, r3, r4, lspush #\push
                mov     r4, r4, lspull #\pull
                orr     r4, r4, r5, lspush #\push
                mov     r5, r5, lspull #\pull
                orr     r5, r5, r6, lspush #\push
                mov     r6, r6, lspull #\pull
                orr     r6, r6, r7, lspush #\push
                mov     r7, r7, lspull #\pull
                orr     r7, r7, r8, lspush #\push
                mov     r8, r8, lspull #\pull
                orr     r8, r8, r9, lspush #\push
                mov     r9, r9, lspull #\pull
                orr     r9, r9, ip, lspush #\push
                mov     ip, ip, lspull #\pull
                orr     ip, ip, lr, lspush #\push
                str8w   r0, r3, r4, r5, r6, r7, r8, r9, ip, , abort=19f
                bge     12b
        PLD(    cmn     r2, #96                 )
        PLD(    bge     13b                     )

                ldmfd   sp!, {r5 - r9}
        UNWIND( .fnend                          ) @ end of the second stmfd block

        UNWIND( .fnstart                        )
                usave   r4, lr                    @ still in first stmdb block
14:             ands    ip, r2, #28
                beq     16f
```

```
15:             mov     r3, lr, lspull #\pull
                ldr1w   r1, lr, abort=21f
                subs    ip, ip, #4
                orr     r3, r3, lr, lspush #\push
                str1w   r0, r3, abort=21f
                bgt     15b
        CALGN(  cmp     r2, #0                  )
        CALGN(  bge     11b                     )

16:             sub     r1, r1, #(\push / 8)
                b       8b
        UNWIND( .fnend                          )

                .endm


                forward_copy_shift      pull=8  push=24

17:             forward_copy_shift      pull=16 push=16

18:             forward_copy_shift      pull=24 push=8


/*
 * Abort preamble and completion macros.
 * If a fixup handler is required then those macros must surround it.
 * It is assumed that the fixup code will handle the private part of
 * the exit macro.
 */

        .macro  copy_abort_preamble
19:     ldmfd   sp!, {r5 - r9}
        b       21f
20:     ldmfd   sp!, {r5 - r8}
21:
        .endm

        .macro  copy_abort_end
        ldmfd   sp!, {r4, pc}
        .endm

---------------------------------------------------------------------
linux/arch/arm/mm/copypage-feroceon.c
---------------------------------------------------------------------
/*
 *  linux/arch/arm/mm/copypage-feroceon.S
 *
 *  Copyright (C) 2008 Marvell Semiconductors
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This handles copy_user_highpage and clear_user_page on Feroceon
 * more optimally than the generic implementations.
 */
#include <linux/init.h>
#include <linux/highmem.h>
```

```
static void __naked
feroceon_copy_user_page(void *kto, const void *kfrom)
{
        asm("\
        stmfd   sp!, {r4-r9, lr}                \n\
        mov     ip, %2                          \n\
1:      mov     lr, r1                          \n\
        ldmia   r1!, {r2 - r9}                  \n\
        pld     [lr, #32]                       \n\
        pld     [lr, #64]                       \n\
        pld     [lr, #96]                       \n\
        pld     [lr, #128]                      \n\
        pld     [lr, #160]                      \n\
        pld     [lr, #192]                      \n\
        pld     [lr, #224]                      \n\
        stmia   r0, {r2 - r9}                   \n\
        ldmia   r1!, {r2 - r9}                  \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        stmia   r0, {r2 - r9}                   \n\
        ldmia   r1!, {r2 - r9}                  \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        stmia   r0, {r2 - r9}                   \n\
        ldmia   r1!, {r2 - r9}                  \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        stmia   r0, {r2 - r9}                   \n\
        ldmia   r1!, {r2 - r9}                  \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        stmia   r0, {r2 - r9}                   \n\
        ldmia   r1!, {r2 - r9}                  \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        stmia   r0, {r2 - r9}                   \n\
        ldmia   r1!, {r2 - r9}                  \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        stmia   r0, {r2 - r9}                   \n\
        subs    ip, ip, #(32 * 8)               \n\
        mcr     p15, 0, r0, c7, c14, 1          @ clean and invalidate D line\n\
        add     r0, r0, #32                     \n\
        bne     1b                              \n\
        mcr     p15, 0, ip, c7, c10, 4          @ drain WB\n\
        ldmfd   sp!, {r4-r9, pc}"
        :
        : "r" (kto), "r" (kfrom), "I" (PAGE_SIZE));
}

void feroceon_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto, *kfrom;
```

```
        kto = kmap_atomic(to);
        kfrom = kmap_atomic(from);
        flush_cache_page(vma, vaddr, page_to_pfn(from));
        feroceon_copy_user_page(kto, kfrom);
        kunmap_atomic(kfrom);
        kunmap_atomic(kto);
}

void feroceon_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile ("\
        mov     r1, %2                          \n\
        mov     r2, #0                          \n\
        mov     r3, #0                          \n\
        mov     r4, #0                          \n\
        mov     r5, #0                          \n\
        mov     r6, #0                          \n\
        mov     r7, #0                          \n\
        mov     ip, #0                          \n\
        mov     lr, #0                          \n\
1:      stmia   %0, {r2-r7, ip, lr}             \n\
        subs    r1, r1, #1                      \n\
        mcr     p15, 0, %0, c7, c14, 1          @ clean and invalidate D line\n\
        add     %0, %0, #32                     \n\
        bne     1b                              \n\
        mcr     p15, 0, r1, c7, c10, 4          @ drain WB"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 32)
        : "r1", "r2", "r3", "r4", "r5", "r6", "r7", "ip", "lr");
        kunmap_atomic(kaddr);
}

struct cpu_user_fns feroceon_user_fns __initdata = {
        .cpu_clear_user_highpage = feroceon_clear_user_highpage,
        .cpu_copy_user_highpage = feroceon_copy_user_highpage,
};

----------------------------------------------------------------------
linux/arch/arm/mm/copypage-v4wt.c
----------------------------------------------------------------------
/*
 *  linux/arch/arm/mm/copypage-v4wt.S
 *
 *  Copyright (C) 1995-1999 Russell King
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 *  This is for CPUs with a writethrough cache and 'flush ID cache' is
 *  the only supported cache operation.
 */
#include <linux/init.h>
#include <linux/highmem.h>

/*
 * ARMv4 optimised copy_user_highpage
 *
```

```
 * Since we have writethrough caches, we don't have to worry about
 * dirty data in the cache.  However, we do have to ensure that
 * subsequent reads are up to date.
 */
static void __naked
v4wt_copy_user_page(void *kto, const void *kfrom)
{
        asm("\
        stmfd   sp!, {r4, lr}                   @ 2\n\
        mov     r2, %2                          @ 1\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
1:      stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4+1\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
        subs    r2, r2, #1                      @ 1\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmneia r1!, {r3, r4, ip, lr}           @ 4\n\
        bne     1b                              @ 1\n\
        mcr     p15, 0, r2, c7, c7, 0           @ flush ID cache\n\
        ldmfd   sp!, {r4, pc}                   @ 3"
        :
        : "r" (kto), "r" (kfrom), "I" (PAGE_SIZE / 64));
}

void v4wt_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto, *kfrom;

        kto = kmap_atomic(to);
        kfrom = kmap_atomic(from);
        v4wt_copy_user_page(kto, kfrom);
        kunmap_atomic(kfrom);
        kunmap_atomic(kto);
}

/*
 * ARMv4 optimised clear_user_page
 *
 * Same story as above.
 */
void v4wt_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile("\
        mov     r1, %2                          @ 1\n\
        mov     r2, #0                          @ 1\n\
        mov     r3, #0                          @ 1\n\
        mov     ip, #0                          @ 1\n\
        mov     lr, #0                          @ 1\n\
1:      stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        subs    r1, r1, #1                      @ 1\n\
        bne     1b                              @ 1\n\
```

```
        mcr     p15, 0, r2, c7, c7, 0           @ flush ID cache"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 64)
        : "r1", "r2", "r3", "ip", "lr");
        kunmap_atomic(kaddr);
}

struct cpu_user_fns v4wt_user_fns __initdata = {
        .cpu_clear_user_highpage = v4wt_clear_user_highpage,
        .cpu_copy_user_highpage = v4wt_copy_user_highpage,
};
---------------------------------------------------------------------
linux/arch/arm/mm/copypage-v6.c
---------------------------------------------------------------------
/*
 *  linux/arch/arm/mm/copypage-v6.c
 *
 *  Copyright (C) 2002 Deep Blue Solutions Ltd, All Rights Reserved.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */
#include <linux/init.h>
#include <linux/spinlock.h>
#include <linux/mm.h>
#include <linux/highmem.h>

#include <asm/pgtable.h>
#include <asm/shmparam.h>
#include <asm/tlbflush.h>
#include <asm/cacheflush.h>
#include <asm/cachetype.h>

#include "mm.h"

#if SHMLBA > 16384
#error FIX ME
#endif

static DEFINE_RAW_SPINLOCK(v6_lock);

/*
 * Copy the user page.  No aliasing to deal with so we can just
 * attack the kernel's existing mapping of these pages.
 */
static void v6_copy_user_highpage_nonaliasing(struct page *to,
        struct page *from, unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto, *kfrom;

        kfrom = kmap_atomic(from);
        kto = kmap_atomic(to);
        copy_page(kto, kfrom);
        kunmap_atomic(kto);
        kunmap_atomic(kfrom);
}

/*
```

```
 * Clear the user page.  No aliasing to deal with so we can just
 * attack the kernel's existing mapping of this page.
 */
static void v6_clear_user_highpage_nonaliasing(struct page *page, unsigned long vaddr)
{
        void *kaddr = kmap_atomic(page);
        clear_page(kaddr);
        kunmap_atomic(kaddr);
}

/*
 * Discard data in the kernel mapping for the new page.
 * FIXME: needs this MCRR to be supported.
 */
static void discard_old_kernel_data(void *kto)
{
        __asm__("mcrr   p15, 0, %1, %0, c6      @ 0xec401f06"
           :
           : "r" (kto),
             "r" ((unsigned long)kto + PAGE_SIZE - 1)
           : "cc");
}

/*
 * Copy the page, taking account of the cache colour.
 */
static void v6_copy_user_highpage_aliasing(struct page *to,
        struct page *from, unsigned long vaddr, struct vm_area_struct *vma)
{
        unsigned int offset = CACHE_COLOUR(vaddr);
        unsigned long kfrom, kto;

        if (!test_and_set_bit(PG_dcache_clean, &from->flags))
                __flush_dcache_page(page_mapping(from), from);

        /* FIXME: not highmem safe */
        discard_old_kernel_data(page_address(to));

        /*
         * Now copy the page using the same cache colour as the
         * pages ultimate destination.
         */
        raw_spin_lock(&v6_lock);

        kfrom = COPYPAGE_V6_FROM + (offset << PAGE_SHIFT);
        kto   = COPYPAGE_V6_TO + (offset << PAGE_SHIFT);

        set_top_pte(kfrom, mk_pte(from, PAGE_KERNEL));
        set_top_pte(kto, mk_pte(to, PAGE_KERNEL));

        copy_page((void *)kto, (void *)kfrom);

        raw_spin_unlock(&v6_lock);
}

/*
 * Clear the user page.  We need to deal with the aliasing issues,
 * so remap the kernel page into the same cache colour as the user
 * page.
```

```
 */
static void v6_clear_user_highpage_aliasing(struct page *page, unsigned long vaddr)
{
        unsigned long to = COPYPAGE_V6_TO + (CACHE_COLOUR(vaddr) << PAGE_SHIFT);

        /* FIXME: not highmem safe */
        discard_old_kernel_data(page_address(page));

        /*
         * Now clear the page using the same cache colour as
         * the pages ultimate destination.
         */
        raw_spin_lock(&v6_lock);

        set_top_pte(to, mk_pte(page, PAGE_KERNEL));
        clear_page((void *)to);

        raw_spin_unlock(&v6_lock);
}

struct cpu_user_fns v6_user_fns __initdata = {
        .cpu_clear_user_highpage = v6_clear_user_highpage_nonaliasing,
        .cpu_copy_user_highpage = v6_copy_user_highpage_nonaliasing,
};

static int __init v6_userpage_init(void)
{
        if (cache_is_vipt_aliasing()) {
                cpu_user.cpu_clear_user_highpage = v6_clear_user_highpage_aliasing;
                cpu_user.cpu_copy_user_highpage = v6_copy_user_highpage_aliasing;
        }

        return 0;
}

core_initcall(v6_userpage_init);
------------------------------------------------------------------
linux/arch/arm/mm/copypage-v4wb.c
------------------------------------------------------------------
/*
 *  linux/arch/arm/mm/copypage-v4wb.c
 *
 *  Copyright (C) 1995-1999 Russell King
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */
#include <linux/init.h>
#include <linux/highmem.h>

/*
 * ARMv4 optimised copy_user_highpage
 *
 * We flush the destination cache lines just before we write the data into the
 * corresponding address.  Since the Dcache is read-allocate, this removes the
 * Dcache aliasing issue.  The writes will be forwarded to the write buffer,
 * and merged as appropriate.
 *
```

```
 * Note: We rely on all ARMv4 processors implementing the "invalidate D line"
 * instruction.  If your processor does not supply this, you have to write your
 * own copy_user_highpage that does the right thing.
 */
static void __naked
v4wb_copy_user_page(void *kto, const void *kfrom)
{
        asm("\
        stmfd   sp!, {r4, lr}                   @ 2\n\
        mov     r2, %2                          @ 1\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
1:      mcr     p15, 0, r0, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4+1\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
        mcr     p15, 0, r0, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
        subs    r2, r2, #1                      @ 1\n\
        stmia   r0!, {r3, r4, ip, lr}           @ 4\n\
        ldmneia r1!, {r3, r4, ip, lr}           @ 4\n\
        bne     1b                              @ 1\n\
        mcr     p15, 0, r1, c7, c10, 4          @ 1   drain WB\n\
        ldmfd    sp!, {r4, pc}                  @ 3"
        :
        : "r" (kto), "r" (kfrom), "I" (PAGE_SIZE / 64));
}

void v4wb_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto, *kfrom;

        kto = kmap_atomic(to);
        kfrom = kmap_atomic(from);
        flush_cache_page(vma, vaddr, page_to_pfn(from));
        v4wb_copy_user_page(kto, kfrom);
        kunmap_atomic(kfrom);
        kunmap_atomic(kto);
}

/*
 * ARMv4 optimised clear_user_page
 *
 * Same story as above.
 */
void v4wb_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile("\
        mov     r1, %2                          @ 1\n\
        mov     r2, #0                          @ 1\n\
        mov     r3, #0                          @ 1\n\
        mov     ip, #0                          @ 1\n\
        mov     lr, #0                          @ 1\n\
1:      mcr     p15, 0, %0, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
```

```
        mcr     p15, 0, %0, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        subs    r1, r1, #1                      @ 1\n\
        bne     1b                              @ 1\n\
        mcr     p15, 0, r1, c7, c10, 4          @ 1   drain WB"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 64)
        : "r1", "r2", "r3", "ip", "lr");
        kunmap_atomic(kaddr);
}

struct cpu_user_fns v4wb_user_fns __initdata = {
        .cpu_clear_user_highpage = v4wb_clear_user_highpage,
        .cpu_copy_user_highpage = v4wb_copy_user_highpage,
};
---------------------------------------------------------------
linux/arch/arm/mm/copypage-xsc3.c
---------------------------------------------------------------
/*
 *  linux/arch/arm/mm/copypage-xsc3.S
 *
 *  Copyright (C) 2004 Intel Corp.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * Adapted for 3rd gen XScale core, no more mini-dcache
 * Author: Matt Gilbert (matthew.m.gilbert@intel.com)
 */
#include <linux/init.h>
#include <linux/highmem.h>

/*
 * General note:
 *  We don't really want write-allocate cache behaviour for these functions
 *  since that will just eat through 8K of the cache.
 */

/*
 * XSC3 optimised copy_user_highpage
 *  r0 = destination
 *  r1 = source
 *
 * The source page may have some clean entries in the cache already, but we
 * can safely ignore them - break_cow() will flush them out of the cache
 * if we eventually end up using our copied page.
 *
 */
static void __naked
xsc3_mc_copy_user_page(void *kto, const void *kfrom)
{
        asm("\
        stmfd   sp!, {r4, r5, lr}               \n\
        mov     lr, %2                          \n\
                                                \n\
        pld     [r1, #0]                        \n\
        pld     [r1, #32]                       \n\
```

```
1:      pld     [r1, #64]                       \n\
        pld     [r1, #96]                       \n\
                                                \n\
2:      ldrd    r2, [r1], #8                    \n\
        mov     ip, r0                          \n\
        ldrd    r4, [r1], #8                    \n\
        mcr     p15, 0, ip, c7, c6, 1           @ invalidate\n\
        strd    r2, [r0], #8                    \n\
        ldrd    r2, [r1], #8                    \n\
        strd    r4, [r0], #8                    \n\
        ldrd    r4, [r1], #8                    \n\
        strd    r2, [r0], #8                    \n\
        strd    r4, [r0], #8                    \n\
        ldrd    r2, [r1], #8                    \n\
        mov     ip, r0                          \n\
        ldrd    r4, [r1], #8                    \n\
        mcr     p15, 0, ip, c7, c6, 1           @ invalidate\n\
        strd    r2, [r0], #8                    \n\
        ldrd    r2, [r1], #8                    \n\
        subs    lr, lr, #1                      \n\
        strd    r4, [r0], #8                    \n\
        ldrd    r4, [r1], #8                    \n\
        strd    r2, [r0], #8                    \n\
        strd    r4, [r0], #8                    \n\
        bgt     1b                              \n\
        beq     2b                              \n\
                                                \n\
        ldmfd   sp!, {r4, r5, pc}"
        :
        : "r" (kto), "r" (kfrom), "I" (PAGE_SIZE / 64 - 1));
}

void xsc3_mc_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto, *kfrom;

        kto = kmap_atomic(to);
        kfrom = kmap_atomic(from);
        flush_cache_page(vma, vaddr, page_to_pfn(from));
        xsc3_mc_copy_user_page(kto, kfrom);
        kunmap_atomic(kfrom);
        kunmap_atomic(kto);
}

/*
 * XScale optimised clear_user_page
 *  r0 = destination
 *  r1 = virtual user address of ultimate destination page
 */
void xsc3_mc_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile ("\
        mov     r1, %2                          \n\
        mov     r2, #0                          \n\
        mov     r3, #0                          \n\
1:      mcr     p15, 0, %0, c7, c6, 1           @ invalidate line\n\
        strd    r2, [%0], #8                    \n\
```

```
        strd    r2, [%0], #8                    \n\
        strd    r2, [%0], #8                    \n\
        strd    r2, [%0], #8                    \n\
        subs    r1, r1, #1                      \n\
        bne     1b"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 32)
        : "r1", "r2", "r3");
        kunmap_atomic(kaddr);
}

struct cpu_user_fns xsc3_mc_user_fns __initdata = {
        .cpu_clear_user_highpage = xsc3_mc_clear_user_highpage,
        .cpu_copy_user_highpage = xsc3_mc_copy_user_highpage,
};
----------------------------------------------------------------
linux/arch/arm/mm/copypage-xscale.c
----------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copypage-xscale.S
 *
 *  Copyright (C) 1995-2005 Russell King
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This handles the mini data cache, as found on SA11x0 and XScale
 * processors.  When we copy a user page page, we map it in such a way
 * that accesses to this page will not touch the main data cache, but
 * will be cached in the mini data cache.  This prevents us thrashing
 * the main data cache on page faults.
 */
#include <linux/init.h>
#include <linux/mm.h>
#include <linux/highmem.h>

#include <asm/pgtable.h>
#include <asm/tlbflush.h>
#include <asm/cacheflush.h>

#include "mm.h"

#define minicache_pgprot __pgprot(L_PTE_PRESENT | L_PTE_YOUNG | \
                                  L_PTE_MT_MINICACHE)

static DEFINE_RAW_SPINLOCK(minicache_lock);

/*
 * XScale mini-dcache optimised copy_user_highpage
 *
 * We flush the destination cache lines just before we write the data into the
 * corresponding address.  Since the Dcache is read-allocate, this removes the
 * Dcache aliasing issue.  The writes will be forwarded to the write buffer,
 * and merged as appropriate.
 */
static void __naked
mc_copy_user_page(void *from, void *to)
{
```

```
        /*
         * Strangely enough, best performance is achieved
         * when prefetching destination as well.  (NP)
         */
        asm volatile(
        "stmfd  sp!, {r4, r5, lr}               \n\
        mov     lr, %2                          \n\
        pld     [r0, #0]                        \n\
        pld     [r0, #32]                       \n\
        pld     [r1, #0]                        \n\
        pld     [r1, #32]                       \n\
1:      pld     [r0, #64]                       \n\
        pld     [r0, #96]                       \n\
        pld     [r1, #64]                       \n\
        pld     [r1, #96]                       \n\
2:      ldrd    r2, [r0], #8                    \n\
        ldrd    r4, [r0], #8                    \n\
        mov     ip, r1                          \n\
        strd    r2, [r1], #8                    \n\
        ldrd    r2, [r0], #8                    \n\
        strd    r4, [r1], #8                    \n\
        ldrd    r4, [r0], #8                    \n\
        strd    r2, [r1], #8                    \n\
        strd    r4, [r1], #8                    \n\
        mcr     p15, 0, ip, c7, c10, 1          @ clean D line\n\
        ldrd    r2, [r0], #8                    \n\
        mcr     p15, 0, ip, c7, c6, 1           @ invalidate D line\n\
        ldrd    r4, [r0], #8                    \n\
        mov     ip, r1                          \n\
        strd    r2, [r1], #8                    \n\
        ldrd    r2, [r0], #8                    \n\
        strd    r4, [r1], #8                    \n\
        ldrd    r4, [r0], #8                    \n\
        strd    r2, [r1], #8                    \n\
        strd    r4, [r1], #8                    \n\
        mcr     p15, 0, ip, c7, c10, 1          @ clean D line\n\
        subs    lr, lr, #1                      \n\
        mcr     p15, 0, ip, c7, c6, 1           @ invalidate D line\n\
        bgt     1b                              \n\
        beq     2b                              \n\
        ldmfd   sp!, {r4, r5, pc}               "
        :
        : "r" (from), "r" (to), "I" (PAGE_SIZE / 64 - 1));
}

void xscale_mc_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto = kmap_atomic(to);

        if (!test_and_set_bit(PG_dcache_clean, &from->flags))
                __flush_dcache_page(page_mapping(from), from);

        raw_spin_lock(&minicache_lock);

        set_top_pte(COPYPAGE_MINICACHE, mk_pte(from, minicache_pgprot));

        mc_copy_user_page((void *)COPYPAGE_MINICACHE, kto);
```

```
        raw_spin_unlock(&minicache_lock);

        kunmap_atomic(kto);
}

/*
 * XScale optimised clear_user_page
 */
void
xscale_mc_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile(
        "mov    r1, %2                          \n\
        mov     r2, #0                          \n\
        mov     r3, #0                          \n\
1:      mov     ip, %0                          \n\
        strd    r2, [%0], #8                    \n\
        strd    r2, [%0], #8                    \n\
        strd    r2, [%0], #8                    \n\
        strd    r2, [%0], #8                    \n\
        mcr     p15, 0, ip, c7, c10, 1          @ clean D line\n\
        subs    r1, r1, #1                      \n\
        mcr     p15, 0, ip, c7, c6, 1           @ invalidate D line\n\
        bne     1b"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 32)
        : "r1", "r2", "r3", "ip");
        kunmap_atomic(kaddr);
}

struct cpu_user_fns xscale_mc_user_fns __initdata = {
        .cpu_clear_user_highpage = xscale_mc_clear_user_highpage,
        .cpu_copy_user_highpage = xscale_mc_copy_user_highpage,
};
----------------------------------------------------------------------
linux/arch/arm/mm/copypage-v4mc.c
----------------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copypage-armv4mc.S
 *
 *  Copyright (C) 1995-2005 Russell King
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This handles the mini data cache, as found on SA11x0 and XScale
 * processors.  When we copy a user page page, we map it in such a way
 * that accesses to this page will not touch the main data cache, but
 * will be cached in the mini data cache.  This prevents us thrashing
 * the main data cache on page faults.
 */
#include <linux/init.h>
#include <linux/mm.h>
#include <linux/highmem.h>

#include <asm/pgtable.h>
#include <asm/tlbflush.h>
```

```
#include <asm/cacheflush.h>

#include "mm.h"

#define minicache_pgprot __pgprot(L_PTE_PRESENT | L_PTE_YOUNG | \
                                  L_PTE_MT_MINICACHE)

static DEFINE_RAW_SPINLOCK(minicache_lock);

/*
 * ARMv4 mini-dcache optimised copy_user_highpage
 *
 * We flush the destination cache lines just before we write the data into the
 * corresponding address.  Since the Dcache is read-allocate, this removes the
 * Dcache aliasing issue.  The writes will be forwarded to the write buffer,
 * and merged as appropriate.
 *
 * Note: We rely on all ARMv4 processors implementing the "invalidate D line"
 * instruction.  If your processor does not supply this, you have to write your
 * own copy_user_highpage that does the right thing.
 */
static void __naked
mc_copy_user_page(void *from, void *to)
{
        asm volatile(
        "stmfd  sp!, {r4, lr}                   @ 2\n\
        mov     r4, %2                          @ 1\n\
        ldmia   %0!, {r2, r3, ip, lr}           @ 4\n\
1:      mcr     p15, 0, %1, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   %1!, {r2, r3, ip, lr}           @ 4\n\
        ldmia   %0!, {r2, r3, ip, lr}           @ 4+1\n\
        stmia   %1!, {r2, r3, ip, lr}           @ 4\n\
        ldmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        mcr     p15, 0, %1, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   %1!, {r2, r3, ip, lr}           @ 4\n\
        ldmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        subs    r4, r4, #1                      @ 1\n\
        stmia   %1!, {r2, r3, ip, lr}           @ 4\n\
        ldmneia %0!, {r2, r3, ip, lr}           @ 4\n\
        bne     1b                              @ 1\n\
        ldmfd   sp!, {r4, pc}                   @ 3"
        :
        : "r" (from), "r" (to), "I" (PAGE_SIZE / 64));
}

void v4_mc_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto = kmap_atomic(to);

        if (!test_and_set_bit(PG_dcache_clean, &from->flags))
                __flush_dcache_page(page_mapping(from), from);

        raw_spin_lock(&minicache_lock);

        set_top_pte(COPYPAGE_MINICACHE, mk_pte(from, minicache_pgprot));

        mc_copy_user_page((void *)COPYPAGE_MINICACHE, kto);
```

```
        raw_spin_unlock(&minicache_lock);

        kunmap_atomic(kto);
}

/*
 * ARMv4 optimised clear_user_page
 */
void v4_mc_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile("\
        mov     r1, %2                          @ 1\n\
        mov     r2, #0                          @ 1\n\
        mov     r3, #0                          @ 1\n\
        mov     ip, #0                          @ 1\n\
        mov     lr, #0                          @ 1\n\
1:      mcr     p15, 0, %0, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        mcr     p15, 0, %0, c7, c6, 1           @ 1   invalidate D line\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        stmia   %0!, {r2, r3, ip, lr}           @ 4\n\
        subs    r1, r1, #1                      @ 1\n\
        bne     1b                              @ 1"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 64)
        : "r1", "r2", "r3", "ip", "lr");
        kunmap_atomic(kaddr);
}

struct cpu_user_fns v4_mc_user_fns __initdata = {
        .cpu_clear_user_highpage = v4_mc_clear_user_highpage,
        .cpu_copy_user_highpage = v4_mc_copy_user_highpage,
};
---------------------------------------------------------------------
linux/arch/arm/mm/copypage-fa.c
---------------------------------------------------------------------
/*
 *  linux/arch/arm/lib/copypage-fa.S
 *
 *  Copyright (C) 2005 Faraday Corp.
 *  Copyright (C) 2008-2009 Paulius Zaleckas <paulius.zaleckas@teltonika.lt>
 *
 * Based on copypage-v4wb.S:
 *  Copyright (C) 1995-1999 Russell King
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */
#include <linux/init.h>
#include <linux/highmem.h>

/*
 * Faraday optimised copy_user_page
 */
static void __naked
fa_copy_user_page(void *kto, const void *kfrom)
```

```
{
        asm("\
        stmfd   sp!, {r4, lr}                   @ 2\n\
        mov     r2, %0                          @ 1\n\
1:      ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
        stmia   r0, {r3, r4, ip, lr}            @ 4\n\
        mcr     p15, 0, r0, c7, c14, 1          @ 1   clean and invalidate D line\n\
        add     r0, r0, #16                     @ 1\n\
        ldmia   r1!, {r3, r4, ip, lr}           @ 4\n\
        stmia   r0, {r3, r4, ip, lr}            @ 4\n\
        mcr     p15, 0, r0, c7, c14, 1          @ 1   clean and invalidate D line\n\
        add     r0, r0, #16                     @ 1\n\
        subs    r2, r2, #1                      @ 1\n\
        bne     1b                              @ 1\n\
        mcr     p15, 0, r2, c7, c10, 4          @ 1   drain WB\n\
        ldmfd   sp!, {r4, pc}                   @ 3"
        :
        : "I" (PAGE_SIZE / 32));
}

void fa_copy_user_highpage(struct page *to, struct page *from,
        unsigned long vaddr, struct vm_area_struct *vma)
{
        void *kto, *kfrom;

        kto = kmap_atomic(to);
        kfrom = kmap_atomic(from);
        fa_copy_user_page(kto, kfrom);
        kunmap_atomic(kfrom);
        kunmap_atomic(kto);
}

/*
 * Faraday optimised clear_user_page
 *
 * Same story as above.
 */
void fa_clear_user_highpage(struct page *page, unsigned long vaddr)
{
        void *ptr, *kaddr = kmap_atomic(page);
        asm volatile("\
        mov     r1, %2                          @ 1\n\
        mov     r2, #0                          @ 1\n\
        mov     r3, #0                          @ 1\n\
        mov     ip, #0                          @ 1\n\
        mov     lr, #0                          @ 1\n\
1:      stmia   %0, {r2, r3, ip, lr}            @ 4\n\
        mcr     p15, 0, %0, c7, c14, 1          @ 1   clean and invalidate D line\n\
        add     %0, %0, #16                     @ 1\n\
        stmia   %0, {r2, r3, ip, lr}            @ 4\n\
        mcr     p15, 0, %0, c7, c14, 1          @ 1   clean and invalidate D line\n\
        add     %0, %0, #16                     @ 1\n\
        subs    r1, r1, #1                      @ 1\n\
        bne     1b                              @ 1\n\
        mcr     p15, 0, r1, c7, c10, 4          @ 1   drain WB"
        : "=r" (ptr)
        : "0" (kaddr), "I" (PAGE_SIZE / 32)
        : "r1", "r2", "r3", "ip", "lr");
        kunmap_atomic(kaddr);
```

```
}

struct cpu_user_fns fa_user_fns __initdata = {
        .cpu_clear_user_highpage = fa_clear_user_highpage,
        .cpu_copy_user_highpage = fa_copy_user_highpage,
};
----------------------------------------------------------------------
linux/arch/unicore32/lib/copy_page.S
----------------------------------------------------------------------
/*
 * linux/arch/unicore32/lib/copy_page.S
 *
 * Code specific to PKUnity SoC and UniCore ISA
 *
 * Copyright (C) 2001-2010 GUAN Xue-tao
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 *  ASM optimised string functions
 */
#include <linux/linkage.h>
#include <asm/assembler.h>
#include <generated/asm-offsets.h>
#include <asm/cache.h>

#define COPY_COUNT (PAGE_SZ/256)

                .text
                .align  5
/*
 * UniCore optimised copy_page routine
 */
ENTRY(copy_page)
                stm.w   (r17 - r19, lr), [sp-]
                mov     r17, r0
                mov     r18, r1
                mov     r19, #COPY_COUNT
1:
        .rept   4
                ldm.w   (r0 - r15), [r18]+
                stm.w   (r0 - r15), [r17]+
        .endr
                sub.a   r19, r19, #1
                bne     1b
                ldm.w   (r17 - r19, pc), [sp]+
ENDPROC(copy_page)
----------------------------------------------------------------------
linux/arch/unicore32/lib/copy_from_user.S
----------------------------------------------------------------------
/*
 * linux/arch/unicore32/lib/copy_from_user.S
 *
 * Code specific to PKUnity SoC and UniCore ISA
 *
 * Copyright (C) 2001-2010 GUAN Xue-tao
 *
 * This program is free software; you can redistribute it and/or modify
```

```
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */

#include <linux/linkage.h>
#include <asm/assembler.h>

/*
 * Prototype:
 *
 *      size_t raw_copy_from_user(void *to, const void *from, size_t n)
 *
 * Purpose:
 *
 *      copy a block to kernel memory from user memory
 *
 * Params:
 *
 *      to = kernel memory
 *      from = user memory
 *      n = number of bytes to copy
 *
 * Return value:
 *
 *      Number of bytes NOT copied.
 */

        .macro ldr1w ptr reg abort
        ldrusr  \reg, \ptr, 4, abort=\abort
        .endm

        .macro ldr4w ptr reg1 reg2 reg3 reg4 abort
100:    ldm.w   (\reg1, \reg2, \reg3, \reg4), [\ptr]+
        .pushsection __ex_table, "a"
        .align  3
        .long 100b, \abort
        .popsection
        .endm

        .macro ldr8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
100:    ldm.w (\reg1, \reg2, \reg3, \reg4, \reg5, \reg6, \reg7, \reg8), [\ptr]+
        .pushsection __ex_table, "a"
        .align  3
        .long 100b, \abort
        .popsection
        .endm

        .macro ldr1b ptr reg cond=al abort
        ldrusr  \reg, \ptr, 1, \cond, abort=\abort
        .endm

        .macro str1w ptr reg abort
        stw.w \reg, [\ptr]+, #4
        .endm

        .macro str8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
        stm.w (\reg1, \reg2, \reg3, \reg4, \reg5, \reg6, \reg7, \reg8), [\ptr]+
        .endm
```

```
        .macro str1b ptr reg cond=al abort
        .ifnc   \cond, al
        b\cond  201f
        b       202f
        .endif
201:    stb.w \reg, [\ptr]+, #1
202:
        .endm

        .macro enter
        mov     r3, #0
        stm.w   (r0, r2, r3), [sp-]
        .endm

        .macro exit
        add     sp, sp, #8
        ldm.w   (r0), [sp]+
        mov     pc, lr
        .endm

        .text

ENTRY(raw_copy_from_user)

#include "copy_template.S"

ENDPROC(raw_copy_from_user)

        .pushsection .fixup,"ax"
        .align 0
        copy_abort_preamble
        ldm.w   (r1, r2, r3), [sp]+
        sub     r0, r0, r1
        rsub    r0, r0, r2
        copy_abort_end
        .popsection

---------------------------------------------------------------------
linux/arch/unicore32/lib/copy_to_user.S
---------------------------------------------------------------------
/*
 * linux/arch/unicore32/lib/copy_to_user.S
 *
 * Code specific to PKUnity SoC and UniCore ISA
 *
 * Copyright (C) 2001-2010 GUAN Xue-tao
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */

#include <linux/linkage.h>
#include <asm/assembler.h>

/*
 * Prototype:
 *
 *      size_t raw_copy_to_user(void *to, const void *from, size_t n)
```

```
 *
 * Purpose:
 *
 *      copy a block to user memory from kernel memory
 *
 * Params:
 *
 *      to = user memory
 *      from = kernel memory
 *      n = number of bytes to copy
 *
 * Return value:
 *
 *      Number of bytes NOT copied.
 */

        .macro ldr1w ptr reg abort
        ldw.w \reg, [\ptr]+, #4
        .endm

        .macro ldr4w ptr reg1 reg2 reg3 reg4 abort
        ldm.w   (\reg1, \reg2, \reg3, \reg4), [\ptr]+
        .endm

        .macro ldr8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
        ldm.w (\reg1, \reg2, \reg3, \reg4, \reg5, \reg6, \reg7, \reg8), [\ptr]+
        .endm

        .macro ldr1b ptr reg cond=al abort
        notcond \cond, .+8
        ldb.w \reg, [\ptr]+, #1
        .endm

        .macro str1w ptr reg abort
        strusr  \reg, \ptr, 4, abort=\abort
        .endm

        .macro str8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
100:    stm.w (\reg1, \reg2, \reg3, \reg4, \reg5, \reg6, \reg7, \reg8), [\ptr]+

        .pushsection __ex_table, "a"
        .long 100b, \abort
        .popsection
        .endm

        .macro str1b ptr reg cond=al abort
        strusr  \reg, \ptr, 1, \cond, abort=\abort
        .endm

        .macro enter
        mov     r3, #0
        stm.w   (r0, r2, r3), [sp-]
        .endm

        .macro exit
        add     sp, sp, #8
        ldm.w   (r0), [sp]+
        mov     pc, lr
        .endm
```

```
        .text

WEAK(raw_copy_to_user)

#include "copy_template.S"

ENDPROC(raw_copy_to_user)

        .pushsection .fixup,"ax"
        .align 0
        copy_abort_preamble
        ldm.w   (r1, r2, r3), [sp]+
        sub     r0, r0, r1
        rsub    r0, r0, r2
        copy_abort_end
        .popsection

---------------------------------------------------------------------
linux/arch/unicore32/lib/copy_template.S
---------------------------------------------------------------------
/*
 * linux/arch/unicore32/lib/copy_template.S
 *
 * Code specific to PKUnity SoC and UniCore ISA
 *
 * Copyright (C) 2001-2010 GUAN Xue-tao
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 */

/*
 * Theory of operation
 * -------------------
 *
 * This file provides the core code for a forward memory copy used in
 * the implementation of memcopy(), copy_to_user() and copy_from_user().
 *
 * The including file must define the following accessor macros
 * according to the need of the given function:
 *
 * ldr1w ptr reg abort
 *
 *      This loads one word from 'ptr', stores it in 'reg' and increments
 *      'ptr' to the next word. The 'abort' argument is used for fixup tables.
 *
 * ldr4w ptr reg1 reg2 reg3 reg4 abort
 * ldr8w ptr, reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
 *
 *      This loads four or eight words starting from 'ptr', stores them
 *      in provided registers and increments 'ptr' past those words.
 *      The'abort' argument is used for fixup tables.
 *
 * ldr1b ptr reg cond abort
 *
 *      Similar to ldr1w, but it loads a byte and increments 'ptr' one byte.
 *      It also must apply the condition code if provided, otherwise the
```

```
 *      "al" condition is assumed by default.
 *
 * str1w ptr reg abort
 * str8w ptr reg1 reg2 reg3 reg4 reg5 reg6 reg7 reg8 abort
 * str1b ptr reg cond abort
 *
 *      Same as their ldr* counterparts, but data is stored to 'ptr' location
 *      rather than being loaded.
 *
 * enter
 *
 *      Preserve the provided registers on the stack plus any additional
 *      data as needed by the implementation including this code. Called
 *      upon code entry.
 *
 * exit
 *
 *      Restore registers with the values previously saved with the
 *      'preserv' macro. Called upon code termination.
 */


                enter

                sub.a   r2, r2, #4
                bsl     8f
                and.a   ip, r0, #3
                bne     9f
                and.a   ip, r1, #3
                bne     10f

1:              sub.a   r2, r2, #(28)
                stm.w   (r5 - r8), [sp-]
                bsl     5f

3:
4:              ldr8w   r1, r3, r4, r5, r6, r7, r8, r10, r11, abort=20f
                sub.a   r2, r2, #32
                str8w   r0, r3, r4, r5, r6, r7, r8, r10, r11, abort=20f
                beq     3b

5:              and.a   ip, r2, #28
                rsub    ip, ip, #32
                beq     7f
                add     pc, pc, ip              @ C is always clear here
                nop

                ldr1w   r1, r3, abort=20f
                ldr1w   r1, r4, abort=20f
                ldr1w   r1, r5, abort=20f
                ldr1w   r1, r6, abort=20f
                ldr1w   r1, r7, abort=20f
                ldr1w   r1, r8, abort=20f
                ldr1w   r1, r11, abort=20f

                add     pc, pc, ip
                nop

                str1w   r0, r3, abort=20f
```

```
                str1w   r0, r4, abort=20f
                str1w   r0, r5, abort=20f
                str1w   r0, r6, abort=20f
                str1w   r0, r7, abort=20f
                str1w   r0, r8, abort=20f
                str1w   r0, r11, abort=20f

7:              ldm.w   (r5 - r8), [sp]+

8:              mov.a   r2, r2 << #31
                ldr1b   r1, r3, ne, abort=21f
                ldr1b   r1, r4, ea, abort=21f
                ldr1b   r1, r10, ea, abort=21f
                str1b   r0, r3, ne, abort=21f
                str1b   r0, r4, ea, abort=21f
                str1b   r0, r10, ea, abort=21f

                exit

9:              rsub    ip, ip, #4
                csub.a  ip, #2
                ldr1b   r1, r3, sg, abort=21f
                ldr1b   r1, r4, eg, abort=21f
                ldr1b   r1, r11, abort=21f
                str1b   r0, r3, sg, abort=21f
                str1b   r0, r4, eg, abort=21f
                sub.a   r2, r2, ip
                str1b   r0, r11, abort=21f
                bsl     8b
                and.a   ip, r1, #3
                beq     1b

10:             andn    r1, r1, #3
                csub.a  ip, #2
                ldr1w   r1, r11, abort=21f
                beq     17f
                bsg     18f


                .macro  forward_copy_shift a b

                sub.a   r2, r2, #28
                bsl     14f

11:             stm.w   (r5 - r9), [sp-]

12:
                ldr4w   r1, r4, r5, r6, r7, abort=19f
                mov     r3, r11 pull #\a
                sub.a   r2, r2, #32
                ldr4w   r1, r8, r9, r10, r11, abort=19f
                or      r3, r3, r4 push #\b
                mov     r4, r4 pull #\a
                or      r4, r4, r5 push #\b
                mov     r5, r5 pull #\a
                or      r5, r5, r6 push #\b
                mov     r6, r6 pull #\a
                or      r6, r6, r7 push #\b
                mov     r7, r7 pull #\a
```

```
                or      r7, r7, r8 push #\b
                mov     r8, r8 pull #\a
                or      r8, r8, r9 push #\b
                mov     r9, r9 pull #\a
                or      r9, r9, r10 push #\b
                mov     r10, r10 pull #\a
                or      r10, r10, r11 push #\b
                str8w   r0, r3, r4, r5, r6, r7, r8, r9, r10, , abort=19f
                beg     12b

                ldm.w   (r5 - r9), [sp]+

14:             and.a   ip, r2, #28
                beq     16f

15:             mov     r3, r11 pull #\a
                ldr1w   r1, r11, abort=21f
                sub.a   ip, ip, #4
                or      r3, r3, r11 push #\b
                str1w   r0, r3, abort=21f
                bsg     15b

16:             sub     r1, r1, #(\b / 8)
                b       8b

                .endm


                forward_copy_shift      a=8     b=24

17:             forward_copy_shift      a=16    b=16

18:             forward_copy_shift      a=24    b=8


/*
 * Abort preamble and completion macros.
 * If a fixup handler is required then those macros must surround it.
 * It is assumed that the fixup code will handle the private part of
 * the exit macro.
 */

        .macro  copy_abort_preamble
19:     ldm.w   (r5 - r9), [sp]+
        b       21f
299:    .word   0                       @ store lr
                                        @ to avoid function call in fixup
20:     ldm.w   (r5 - r8), [sp]+
21:
        adr     r1, 299b
        stw     lr, [r1]
        .endm

        .macro  copy_abort_end
        adr     lr, 299b
        ldw     pc, [lr]
        .endm

-----------------------------------------------------------------
```

```
linux/arch/x86/lib/copy_user_64.S
---------------------------------------------------------------------
/*
 * Copyright 2008 Vitaly Mayatskikh <vmayatsk@redhat.com>
 * Copyright 2002 Andi Kleen, SuSE Labs.
 * Subject to the GNU Public License v2.
 *
 * Functions to copy from and to user space.
 */

#include <linux/linkage.h>
#include <asm/current.h>
#include <asm/asm-offsets.h>
#include <asm/thread_info.h>
#include <asm/cpufeatures.h>
#include <asm/alternative-asm.h>
#include <asm/asm.h>
#include <asm/smap.h>
#include <asm/export.h>

/*
 * copy_user_generic_unrolled - memory copy with exception handling.
 * This version is for CPUs like P4 that don't have efficient micro
 * code for rep movsq
 *
 * Input:
 * rdi destination
 * rsi source
 * rdx count
 *
 * Output:
 * eax uncopied bytes or 0 if successful.
 */
ENTRY(copy_user_generic_unrolled)
        ASM_STAC
        cmpl $8,%edx
        jb 20f          /* less then 8 bytes, go to byte copy loop */
        ALIGN_DESTINATION
        movl %edx,%ecx
        andl $63,%edx
        shrl $6,%ecx
        jz .L_copy_short_string
1:      movq (%rsi),%r8
2:      movq 1*8(%rsi),%r9
3:      movq 2*8(%rsi),%r10
4:      movq 3*8(%rsi),%r11
5:      movq %r8,(%rdi)
6:      movq %r9,1*8(%rdi)
7:      movq %r10,2*8(%rdi)
8:      movq %r11,3*8(%rdi)
9:      movq 4*8(%rsi),%r8
10:     movq 5*8(%rsi),%r9
11:     movq 6*8(%rsi),%r10
12:     movq 7*8(%rsi),%r11
13:     movq %r8,4*8(%rdi)
14:     movq %r9,5*8(%rdi)
15:     movq %r10,6*8(%rdi)
16:     movq %r11,7*8(%rdi)
        leaq 64(%rsi),%rsi
```

```
        leaq 64(%rdi),%rdi
        decl %ecx
        jnz 1b
.L_copy_short_string:
        movl %edx,%ecx
        andl $7,%edx
        shrl $3,%ecx
        jz 20f
18:     movq (%rsi),%r8
19:     movq %r8,(%rdi)
        leaq 8(%rsi),%rsi
        leaq 8(%rdi),%rdi
        decl %ecx
        jnz 18b
20:     andl %edx,%edx
        jz 23f
        movl %edx,%ecx
21:     movb (%rsi),%al
22:     movb %al,(%rdi)
        incq %rsi
        incq %rdi
        decl %ecx
        jnz 21b
23:     xor %eax,%eax
        ASM_CLAC
        ret

        .section .fixup,"ax"
30:     shll $6,%ecx
        addl %ecx,%edx
        jmp 60f
40:     leal (%rdx,%rcx,8),%edx
        jmp 60f
50:     movl %ecx,%edx
60:     jmp copy_user_handle_tail /* ecx is zerorest also */
        .previous

        _ASM_EXTABLE(1b,30b)
        _ASM_EXTABLE(2b,30b)
        _ASM_EXTABLE(3b,30b)
        _ASM_EXTABLE(4b,30b)
        _ASM_EXTABLE(5b,30b)
        _ASM_EXTABLE(6b,30b)
        _ASM_EXTABLE(7b,30b)
        _ASM_EXTABLE(8b,30b)
        _ASM_EXTABLE(9b,30b)
        _ASM_EXTABLE(10b,30b)
        _ASM_EXTABLE(11b,30b)
        _ASM_EXTABLE(12b,30b)
        _ASM_EXTABLE(13b,30b)
        _ASM_EXTABLE(14b,30b)
        _ASM_EXTABLE(15b,30b)
        _ASM_EXTABLE(16b,30b)
        _ASM_EXTABLE(18b,40b)
        _ASM_EXTABLE(19b,40b)
        _ASM_EXTABLE(21b,50b)
        _ASM_EXTABLE(22b,50b)
ENDPROC(copy_user_generic_unrolled)
EXPORT_SYMBOL(copy_user_generic_unrolled)
```

```
/* Some CPUs run faster using the string copy instructions.
 * This is also a lot simpler. Use them when possible.
 *
 * Only 4GB of copy is supported. This shouldn't be a problem
 * because the kernel normally only writes from/to page sized chunks
 * even if user space passed a longer buffer.
 * And more would be dangerous because both Intel and AMD have
 * errata with rep movsq > 4GB. If someone feels the need to fix
 * this please consider this.
 *
 * Input:
 * rdi destination
 * rsi source
 * rdx count
 *
 * Output:
 * eax uncopied bytes or 0 if successful.
 */
ENTRY(copy_user_generic_string)
        ASM_STAC
        cmpl $8,%edx
        jb 2f           /* less than 8 bytes, go to byte copy loop */
        ALIGN_DESTINATION
        movl %edx,%ecx
        shrl $3,%ecx
        andl $7,%edx
1:      rep
        movsq
2:      movl %edx,%ecx
3:      rep
        movsb
        xorl %eax,%eax
        ASM_CLAC
        ret

        .section .fixup,"ax"
11:     leal (%rdx,%rcx,8),%ecx
12:     movl %ecx,%edx          /* ecx is zerorest also */
        jmp copy_user_handle_tail
        .previous

        _ASM_EXTABLE(1b,11b)
        _ASM_EXTABLE(3b,12b)
ENDPROC(copy_user_generic_string)
EXPORT_SYMBOL(copy_user_generic_string)

/*
 * Some CPUs are adding enhanced REP MOVSB/STOSB instructions.
 * It's recommended to use enhanced REP MOVSB/STOSB if it's enabled.
 *
 * Input:
 * rdi destination
 * rsi source
 * rdx count
 *
 * Output:
 * eax uncopied bytes or 0 if successful.
 */
```

```
ENTRY(copy_user_enhanced_fast_string)
        ASM_STAC
        cmpl $64,%edx
        jb .L_copy_short_string /* less then 64 bytes, avoid the costly 'rep' */
        movl %edx,%ecx
1:      rep
        movsb
        xorl %eax,%eax
        ASM_CLAC
        ret

        .section .fixup,"ax"
12:     movl %ecx,%edx          /* ecx is zerorest also */
        jmp copy_user_handle_tail
        .previous

        _ASM_EXTABLE(1b,12b)
ENDPROC(copy_user_enhanced_fast_string)
EXPORT_SYMBOL(copy_user_enhanced_fast_string)

/*
 * copy_user_nocache - Uncached memory copy with exception handling
 * This will force destination out of cache for more performance.
 *
 * Note: Cached memory copy is used when destination or size is not
 * naturally aligned. That is:
 *  - Require 8-byte alignment when size is 8 bytes or larger.
 *  - Require 4-byte alignment when size is 4 bytes.
 */
ENTRY(__copy_user_nocache)
        ASM_STAC

        /* If size is less than 8 bytes, go to 4-byte copy */
        cmpl $8,%edx
        jb .L_4b_nocache_copy_entry

        /* If destination is not 8-byte aligned, "cache" copy to align it */
        ALIGN_DESTINATION

        /* Set 4x8-byte copy count and remainder */
        movl %edx,%ecx
        andl $63,%edx
        shrl $6,%ecx
        jz .L_8b_nocache_copy_entry     /* jump if count is 0 */

        /* Perform 4x8-byte nocache loop-copy */
.L_4x8b_nocache_copy_loop:
1:      movq (%rsi),%r8
2:      movq 1*8(%rsi),%r9
3:      movq 2*8(%rsi),%r10
4:      movq 3*8(%rsi),%r11
5:      movnti %r8,(%rdi)
6:      movnti %r9,1*8(%rdi)
7:      movnti %r10,2*8(%rdi)
8:      movnti %r11,3*8(%rdi)
9:      movq 4*8(%rsi),%r8
10:     movq 5*8(%rsi),%r9
11:     movq 6*8(%rsi),%r10
12:     movq 7*8(%rsi),%r11
```

```
13:     movnti %r8,4*8(%rdi)
14:     movnti %r9,5*8(%rdi)
15:     movnti %r10,6*8(%rdi)
16:     movnti %r11,7*8(%rdi)
        leaq 64(%rsi),%rsi
        leaq 64(%rdi),%rdi
        decl %ecx
        jnz .L_4x8b_nocache_copy_loop

        /* Set 8-byte copy count and remainder */
.L_8b_nocache_copy_entry:
        movl %edx,%ecx
        andl $7,%edx
        shrl $3,%ecx
        jz .L_4b_nocache_copy_entry     /* jump if count is 0 */

        /* Perform 8-byte nocache loop-copy */
.L_8b_nocache_copy_loop:
20:     movq (%rsi),%r8
21:     movnti %r8,(%rdi)
        leaq 8(%rsi),%rsi
        leaq 8(%rdi),%rdi
        decl %ecx
        jnz .L_8b_nocache_copy_loop

        /* If no byte left, we're done */
.L_4b_nocache_copy_entry:
        andl %edx,%edx
        jz .L_finish_copy

        /* If destination is not 4-byte aligned, go to byte copy: */
        movl %edi,%ecx
        andl $3,%ecx
        jnz .L_1b_cache_copy_entry

        /* Set 4-byte copy count (1 or 0) and remainder */
        movl %edx,%ecx
        andl $3,%edx
        shrl $2,%ecx
        jz .L_1b_cache_copy_entry       /* jump if count is 0 */

        /* Perform 4-byte nocache copy: */
30:     movl (%rsi),%r8d
31:     movnti %r8d,(%rdi)
        leaq 4(%rsi),%rsi
        leaq 4(%rdi),%rdi

        /* If no bytes left, we're done: */
        andl %edx,%edx
        jz .L_finish_copy

        /* Perform byte "cache" loop-copy for the remainder */
.L_1b_cache_copy_entry:
        movl %edx,%ecx
.L_1b_cache_copy_loop:
40:     movb (%rsi),%al
41:     movb %al,(%rdi)
        incq %rsi
        incq %rdi
```

```
        decl %ecx
        jnz .L_1b_cache_copy_loop

        /* Finished copying; fence the prior stores */
.L_finish_copy:
        xorl %eax,%eax
        ASM_CLAC
        sfence
        ret

        .section .fixup,"ax"
.L_fixup_4x8b_copy:
        shll $6,%ecx
        addl %ecx,%edx
        jmp .L_fixup_handle_tail
.L_fixup_8b_copy:
        lea (%rdx,%rcx,8),%rdx
        jmp .L_fixup_handle_tail
.L_fixup_4b_copy:
        lea (%rdx,%rcx,4),%rdx
        jmp .L_fixup_handle_tail
.L_fixup_1b_copy:
        movl %ecx,%edx
.L_fixup_handle_tail:
        sfence
        jmp copy_user_handle_tail
        .previous

        _ASM_EXTABLE(1b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(2b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(3b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(4b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(5b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(6b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(7b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(8b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(9b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(10b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(11b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(12b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(13b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(14b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(15b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(16b,.L_fixup_4x8b_copy)
        _ASM_EXTABLE(20b,.L_fixup_8b_copy)
        _ASM_EXTABLE(21b,.L_fixup_8b_copy)
        _ASM_EXTABLE(30b,.L_fixup_4b_copy)
        _ASM_EXTABLE(31b,.L_fixup_4b_copy)
        _ASM_EXTABLE(40b,.L_fixup_1b_copy)
        _ASM_EXTABLE(41b,.L_fixup_1b_copy)
ENDPROC(__copy_user_nocache)
EXPORT_SYMBOL(__copy_user_nocache)
----------------------------------------------------------------
linux/arch/x86/lib/copy_page_64.S
----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/* Written 2003 by Andi Kleen, based on a kernel by Evandro Menezes */

#include <linux/linkage.h>
```

```
#include <asm/cpufeatures.h>
#include <asm/alternative-asm.h>
#include <asm/export.h>

/*
 * Some CPUs run faster using the string copy instructions (sane microcode).
 * It is also a lot simpler. Use this when possible. But, don't use streaming
 * copy unless the CPU indicates X86_FEATURE_REP_GOOD. Could vary the
 * prefetch distance based on SMP/UP.
 */
        ALIGN
ENTRY(copy_page)
        ALTERNATIVE "jmp copy_page_regs", "", X86_FEATURE_REP_GOOD
        movl    $4096/8, %ecx
        rep     movsq
        ret
ENDPROC(copy_page)
EXPORT_SYMBOL(copy_page)

ENTRY(copy_page_regs)
        subq    $2*8,   %rsp
        movq    %rbx,   (%rsp)
        movq    %r12,   1*8(%rsp)

        movl    $(4096/64)-5,   %ecx
        .p2align 4
.Loop64:
        dec     %rcx
        movq    0x8*0(%rsi), %rax
        movq    0x8*1(%rsi), %rbx
        movq    0x8*2(%rsi), %rdx
        movq    0x8*3(%rsi), %r8
        movq    0x8*4(%rsi), %r9
        movq    0x8*5(%rsi), %r10
        movq    0x8*6(%rsi), %r11
        movq    0x8*7(%rsi), %r12

        prefetcht0 5*64(%rsi)

        movq    %rax, 0x8*0(%rdi)
        movq    %rbx, 0x8*1(%rdi)
        movq    %rdx, 0x8*2(%rdi)
        movq    %r8,  0x8*3(%rdi)
        movq    %r9,  0x8*4(%rdi)
        movq    %r10, 0x8*5(%rdi)
        movq    %r11, 0x8*6(%rdi)
        movq    %r12, 0x8*7(%rdi)

        leaq    64 (%rsi), %rsi
        leaq    64 (%rdi), %rdi

        jnz     .Loop64

        movl    $5, %ecx
        .p2align 4
.Loop2:
        decl    %ecx

        movq    0x8*0(%rsi), %rax
```

```
        movq    0x8*1(%rsi), %rbx
        movq    0x8*2(%rsi), %rdx
        movq    0x8*3(%rsi), %r8
        movq    0x8*4(%rsi), %r9
        movq    0x8*5(%rsi), %r10
        movq    0x8*6(%rsi), %r11
        movq    0x8*7(%rsi), %r12

        movq    %rax, 0x8*0(%rdi)
        movq    %rbx, 0x8*1(%rdi)
        movq    %rdx, 0x8*2(%rdi)
        movq    %r8,  0x8*3(%rdi)
        movq    %r9,  0x8*4(%rdi)
        movq    %r10, 0x8*5(%rdi)
        movq    %r11, 0x8*6(%rdi)
        movq    %r12, 0x8*7(%rdi)

        leaq    64(%rdi), %rdi
        leaq    64(%rsi), %rsi
        jnz     .Loop2

        movq    (%rsp), %rbx
        movq    1*8(%rsp), %r12
        addq    $2*8, %rsp
        ret
ENDPROC(copy_page_regs)
------------------------------------------------------------------
linux/arch/x86/boot/copy.S
------------------------------------------------------------------
/* ----------------------------------------------------------------------- *
 *
 *   Copyright (C) 1991, 1992 Linus Torvalds
 *   Copyright 2007 rPath, Inc. - All Rights Reserved
 *
 *   This file is part of the Linux kernel, and is made available under
 *   the terms of the GNU General Public License version 2.
 *
 * ----------------------------------------------------------------------- */

#include <linux/linkage.h>

/*
 * Memory copy routines
 */

        .code16
        .text

GLOBAL(memcpy)
        pushw   %si
        pushw   %di
        movw    %ax, %di
        movw    %dx, %si
        pushw   %cx
        shrw    $2, %cx
        rep; movsl
        popw    %cx
        andw    $3, %cx
        rep; movsb
```

```
        popw    %di
        popw    %si
        retl
ENDPROC(memcpy)

GLOBAL(memset)
        pushw   %di
        movw    %ax, %di
        movzbl  %dl, %eax
        imull   $0x01010101,%eax
        pushw   %cx
        shrw    $2, %cx
        rep; stosl
        popw    %cx
        andw    $3, %cx
        rep; stosb
        popw    %di
        retl
ENDPROC(memset)

GLOBAL(copy_from_fs)
        pushw   %ds
        pushw   %fs
        popw    %ds
        calll   memcpy
        popw    %ds
        retl
ENDPROC(copy_from_fs)

GLOBAL(copy_to_fs)
        pushw   %es
        pushw   %fs
        popw    %es
        calll   memcpy
        popw    %es
        retl
ENDPROC(copy_to_fs)
-----------------------------------------------------------------------
linux/arch/x86/realmode/rm/copy.S
-----------------------------------------------------------------------
#include "../../boot/copy.S"
-----------------------------------------------------------------------
linux/arch/metag/lib/copy_page.S
-----------------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
        ! Copyright 2007,2008 Imagination Technologies Ltd.

#include <asm/page.h>

        .text
        .global _copy_page
        .type   _copy_page,function
        !! D1Ar1 - to
        !! D0Ar2 - from
_copy_page:
        MOV  D0FrT,#PAGE_SIZE
$Lcopy_page_loop:
        GETL D0Re0,D1Re0,[D0Ar2++]
        GETL D0Ar6,D1Ar5,[D0Ar2++]
```

```
        SETL [D1Ar1++],D0Re0,D1Re0
        SETL [D1Ar1++],D0Ar6,D1Ar5
        SUBS D0FrT,D0FrT,#16
        BNZ  $Lcopy_page_loop
        MOV  PC,D1RtP
        .size   _copy_page,.-_copy_page
----------------------------------------------------------------------
linux/arch/hexagon/mm/copy_from_user.S
----------------------------------------------------------------------
/*
 * User memory copy functions for kernel
 *
 * Copyright (c) 2010-2011, The Linux Foundation. All rights reserved.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 and
 * only version 2 as published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA
 * 02110-1301, USA.
 */

/*
 * The right way to do this involves valignb
 * The easy way to do this is only speed up src/dest similar alignment.
 */

/*
 * Copy to/from user are the same, except that for packets with a load and
 * a store, I don't know how to tell which kind of exception we got.
 * Therefore, we duplicate the function, and handle faulting addresses
 * differently for each function
 */

/*
 * copy from user: loads can fault
 */
#define src_sav r13
#define dst_sav r12
#define src_dst_sav r13:12
#define d_dbuf r15:14
#define w_dbuf r15

#define dst r0
#define src r1
#define bytes r2
#define loopcount r5

#define FUNCNAME raw_copy_from_user
#include "copy_user_template.S"

        /* LOAD FAULTS from COPY_FROM_USER */
```

```
        /* Alignment loop.  r2 has been updated. Return it. */
        .falign
1009:
2009:
4009:
        {
                r0 = r2
                jumpr r31
        }
        /* Normal copy loops. Do epilog. Use src-src_sav to compute distance */
        /* X - (A - B) == X + B - A */
        .falign
8089:
        {
                memd(dst) = d_dbuf
                r2 += sub(src_sav,src)
        }
        {
                r0 = r2
                jumpr r31
        }
        .falign
4089:
        {
                memw(dst) = w_dbuf
                r2 += sub(src_sav,src)
        }
        {
                r0 = r2
                jumpr r31
        }
        .falign
2089:
        {
                memh(dst) = w_dbuf
                r2 += sub(src_sav,src)
        }
        {
                r0 = r2
                jumpr r31
        }
        .falign
1089:
        {
                memb(dst) = w_dbuf
                r2 += sub(src_sav,src)
        }
        {
                r0 = r2
                jumpr r31
        }

        /* COPY FROM USER: only loads can fail */

        .section __ex_table,"a"
        .long 1000b,1009b
        .long 2000b,2009b
        .long 4000b,4009b
```

```
        .long 8080b,8089b
        .long 4080b,4089b
        .long 2080b,2089b
        .long 1080b,1089b
        .previous
-----------------------------------------------------------------
linux/arch/hexagon/mm/copy_to_user.S
-----------------------------------------------------------------
/*
 * User memory copying routines for the Hexagon Kernel
 *
 * Copyright (c) 2010-2011, The Linux Foundation. All rights reserved.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 and
 * only version 2 as published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA
 * 02110-1301, USA.
 */

/* The right way to do this involves valignb
 * The easy way to do this is only speed up src/dest similar alignment.
 */

/*
 * Copy to/from user are the same, except that for packets with a load and
 * a store, I don't know how to tell which kind of exception we got.
 * Therefore, we duplicate the function, and handle faulting addresses
 * differently for each function
 */

/*
 * copy to user: stores can fault
 */
#define src_sav r13
#define dst_sav r12
#define src_dst_sav r13:12
#define d_dbuf r15:14
#define w_dbuf r15

#define dst r0
#define src r1
#define bytes r2
#define loopcount r5

#define FUNCNAME raw_copy_to_user
#include "copy_user_template.S"

        /* STORE FAULTS from COPY_TO_USER */
        .falign
1109:
```

```
2109:
4109:
        /* Alignment loop.  r2 has been updated.  Return it. */
        {
                r0 = r2
                jumpr r31
        }
        /* Normal copy loops.  Use dst-dst_sav to compute distance */
        /* dst holds best write, no need to unwind any loops */
        /* X - (A - B) == X + B - A */
        .falign
8189:
8199:
4189:
4199:
2189:
2199:
1189:
1199:
        {
                r2 += sub(dst_sav,dst)
        }
        {
                r0 = r2
                jumpr r31
        }

        /* COPY TO USER: only stores can fail */
        .section __ex_table,"a"
        .long 1100b,1109b
        .long 2100b,2109b
        .long 4100b,4109b
        .long 8180b,8189b
        .long 8190b,8199b
        .long 4180b,4189b
        .long 4190b,4199b
        .long 2180b,2189b
        .long 2190b,2199b
        .long 1180b,1189b
        .long 1190b,1199b
        .previous
----------------------------------------------------------------------
linux/arch/hexagon/mm/copy_user_template.S
----------------------------------------------------------------------
/*
 * Copyright (c) 2010-2011, The Linux Foundation. All rights reserved.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 and
 * only version 2 as published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program; if not, write to the Free Software
 * Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA
```

```
 * 02110-1301, USA.
 */

/* Numerology:
 * WXYZ
 * W: width in bytes
 * X: Load=0, Store=1
 * Y: Location 0=preamble,8=loop,9=epilog
 * Z: Location=0,handler=9
 */
        .text
        .global FUNCNAME
        .type FUNCNAME, @function
        .p2align 5
FUNCNAME:
        {
                p0 = cmp.gtu(bytes,#0)
                if (!p0.new) jump:nt .Ldone
                r3 = or(dst,src)
                r4 = xor(dst,src)
        }
        {
                p1 = cmp.gtu(bytes,#15)
                p0 = bitsclr(r3,#7)
                if (!p0.new) jump:nt .Loop_not_aligned_8
                src_dst_sav = combine(src,dst)
        }

        {
                loopcount = lsr(bytes,#3)
                if (!p1) jump .Lsmall
        }
        p3=sp1loop0(.Loop8,loopcount)
.Loop8:
8080:
8180:
        {
                if (p3) memd(dst++#8) = d_dbuf
                d_dbuf = memd(src++#8)
        }:endloop0
8190:
        {
                memd(dst++#8) = d_dbuf
                bytes -= asl(loopcount,#3)
                jump .Lsmall
        }

.Loop_not_aligned_8:
        {
                p0 = bitsclr(r4,#7)
                if (p0.new) jump:nt .Lalign
        }
        {
                p0 = bitsclr(r3,#3)
                if (!p0.new) jump:nt .Loop_not_aligned_4
                p1 = cmp.gtu(bytes,#7)
        }

        {
```

```
                if (!p1) jump .Lsmall
                loopcount = lsr(bytes,#2)
        }
        p3=sp1loop0(.Loop4,loopcount)
.Loop4:
4080:
4180:
        {
                if (p3) memw(dst++#4) = w_dbuf
                w_dbuf = memw(src++#4)
        }:endloop0
4190:
        {
                memw(dst++#4) = w_dbuf
                bytes -= asl(loopcount,#2)
                jump .Lsmall
        }

.Loop_not_aligned_4:
        {
                p0 = bitsclr(r3,#1)
                if (!p0.new) jump:nt .Loop_not_aligned
                p1 = cmp.gtu(bytes,#3)
        }

        {
                if (!p1) jump .Lsmall
                loopcount = lsr(bytes,#1)
        }
        p3=sp1loop0(.Loop2,loopcount)
.Loop2:
2080:
2180:
        {
                if (p3) memh(dst++#2) = w_dbuf
                w_dbuf = memuh(src++#2)
        }:endloop0
2190:
        {
                memh(dst++#2) = w_dbuf
                bytes -= asl(loopcount,#1)
                jump .Lsmall
        }

.Loop_not_aligned: /* Works for as small as one byte */
        p3=sp1loop0(.Loop1,bytes)
.Loop1:
1080:
1180:
        {
                if (p3) memb(dst++#1) = w_dbuf
                w_dbuf = memub(src++#1)
        }:endloop0
        /* Done */
1190:
        {
                memb(dst) = w_dbuf
                jumpr r31
                r0 = #0
```

```
        }

.Lsmall:
        {
                p0 = cmp.gtu(bytes,#0)
                if (p0.new) jump:nt .Loop_not_aligned
        }
.Ldone:
        {
                r0 = #0
                jumpr r31
        }
        .falign
.Lalign:
1000:
        {
                if (p0.new) w_dbuf = memub(src)
                p0 = tstbit(src,#0)
                if (!p1) jump .Lsmall
        }
1100:
        {
                if (p0) memb(dst++#1) = w_dbuf
                if (p0) bytes = add(bytes,#-1)
                if (p0) src = add(src,#1)
        }
2000:
        {
                if (p0.new) w_dbuf = memuh(src)
                p0 = tstbit(src,#1)
                if (!p1) jump .Lsmall
        }
2100:
        {
                if (p0) memh(dst++#2) = w_dbuf
                if (p0) bytes = add(bytes,#-2)
                if (p0) src = add(src,#2)
        }
4000:
        {
                if (p0.new) w_dbuf = memw(src)
                p0 = tstbit(src,#2)
                if (!p1) jump .Lsmall
        }
4100:
        {
                if (p0) memw(dst++#4) = w_dbuf
                if (p0) bytes = add(bytes,#-4)
                if (p0) src = add(src,#4)
                jump FUNCNAME
        }
        .size FUNCNAME,.-FUNCNAME
----------------------------------------------------------------
linux/arch/sparc/lib/copy_page.S
----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/* clear_page.S: UltraSparc optimized copy page.
 *
 * Copyright (C) 1996, 1998, 1999, 2000, 2004 David S. Miller (davem@redhat.com)
```

```
 * Copyright (C) 1997 Jakub Jelinek (jakub@redhat.com)
 */

#include <asm/visasm.h>
#include <asm/thread_info.h>
#include <asm/page.h>
#include <asm/pgtable.h>
#include <asm/spitfire.h>
#include <asm/head.h>
#include <asm/export.h>

        /* What we used to do was lock a TLB entry into a specific
         * TLB slot, clear the page with interrupts disabled, then
         * restore the original TLB entry.  This was great for
         * disturbing the TLB as little as possible, but it meant
         * we had to keep interrupts disabled for a long time.
         *
         * Now, we simply use the normal TLB loading mechanism,
         * and this makes the cpu choose a slot all by itself.
         * Then we do a normal TLB flush on exit.  We need only
         * disable preemption during the clear.
         */

#define DCACHE_SIZE     (PAGE_SIZE * 2)

#if (PAGE_SHIFT == 13)
#define PAGE_SIZE_REM   0x80
#elif (PAGE_SHIFT == 16)
#define PAGE_SIZE_REM   0x100
#else
#error Wrong PAGE_SHIFT specified
#endif

#define TOUCH(reg0, reg1, reg2, reg3, reg4, reg5, reg6, reg7)   \
        fsrc2   %reg0, %f48;    fsrc2   %reg1, %f50;            \
        fsrc2   %reg2, %f52;    fsrc2   %reg3, %f54;            \
        fsrc2   %reg4, %f56;    fsrc2   %reg5, %f58;            \
        fsrc2   %reg6, %f60;    fsrc2   %reg7, %f62;

        .text

        .align          32
        .globl          copy_user_page
        .type           copy_user_page,#function
        EXPORT_SYMBOL(copy_user_page)
copy_user_page:         /* %o0=dest, %o1=src, %o2=vaddr */
        lduw            [%g6 + TI_PRE_COUNT], %o4
        sethi           %hi(PAGE_OFFSET), %g2
        sethi           %hi(PAGE_SIZE), %o3

        ldx             [%g2 + %lo(PAGE_OFFSET)], %g2
        sethi           %hi(PAGE_KERNEL_LOCKED), %g3

        ldx             [%g3 + %lo(PAGE_KERNEL_LOCKED)], %g3
        sub             %o0, %g2, %g1           ! dest paddr

        sub             %o1, %g2, %g2           ! src paddr

        and             %o2, %o3, %o0           ! vaddr D-cache alias bit
```

```
        or              %g1, %g3, %g1           ! dest TTE data

        or              %g2, %g3, %g2           ! src TTE data
        sethi           %hi(TLBTEMP_BASE), %o3

        sethi           %hi(DCACHE_SIZE), %o1
        add             %o0, %o3, %o0           ! dest TTE vaddr

        add             %o4, 1, %o2
        add             %o0, %o1, %o1           ! src TTE vaddr

        /* Disable preemption.  */
        mov             TLB_TAG_ACCESS, %g3
        stw             %o2, [%g6 + TI_PRE_COUNT]

        /* Load TLB entries.  */
        rdpr            %pstate, %o2
        wrpr            %o2, PSTATE_IE, %pstate
        stxa            %o0, [%g3] ASI_DMMU
        stxa            %g1, [%g0] ASI_DTLB_DATA_IN
        membar          #Sync
        stxa            %o1, [%g3] ASI_DMMU
        stxa            %g2, [%g0] ASI_DTLB_DATA_IN
        membar          #Sync
        wrpr            %o2, 0x0, %pstate

cheetah_copy_page_insn:
        ba,pt           %xcc, 9f
         nop

1:
        VISEntryHalf
        membar          #StoreLoad | #StoreStore | #LoadStore
        sethi           %hi((PAGE_SIZE/64)-2), %o2
        mov             %o0, %g1
        prefetch        [%o1 + 0x000], #one_read
        or              %o2, %lo((PAGE_SIZE/64)-2), %o2
        prefetch        [%o1 + 0x040], #one_read
        prefetch        [%o1 + 0x080], #one_read
        prefetch        [%o1 + 0x0c0], #one_read
        ldd             [%o1 + 0x000], %f0
        prefetch        [%o1 + 0x100], #one_read
        ldd             [%o1 + 0x008], %f2
        prefetch        [%o1 + 0x140], #one_read
        ldd             [%o1 + 0x010], %f4
        prefetch        [%o1 + 0x180], #one_read
        fsrc2           %f0, %f16
        ldd             [%o1 + 0x018], %f6
        fsrc2           %f2, %f18
        ldd             [%o1 + 0x020], %f8
        fsrc2           %f4, %f20
        ldd             [%o1 + 0x028], %f10
        fsrc2           %f6, %f22
        ldd             [%o1 + 0x030], %f12
        fsrc2           %f8, %f24
        ldd             [%o1 + 0x038], %f14
        fsrc2           %f10, %f26
        ldd             [%o1 + 0x040], %f0
1:      ldd             [%o1 + 0x048], %f2
```

```
        fsrc2           %f12, %f28
        ldd             [%o1 + 0x050], %f4
        fsrc2           %f14, %f30
        stda            %f16, [%o0] ASI_BLK_P
        ldd             [%o1 + 0x058], %f6
        fsrc2           %f0, %f16
        ldd             [%o1 + 0x060], %f8
        fsrc2           %f2, %f18
        ldd             [%o1 + 0x068], %f10
        fsrc2           %f4, %f20
        ldd             [%o1 + 0x070], %f12
        fsrc2           %f6, %f22
        ldd             [%o1 + 0x078], %f14
        fsrc2           %f8, %f24
        ldd             [%o1 + 0x080], %f0
        prefetch        [%o1 + 0x180], #one_read
        fsrc2           %f10, %f26
        subcc           %o2, 1, %o2
        add             %o0, 0x40, %o0
        bne,pt          %xcc, 1b
         add            %o1, 0x40, %o1

        ldd             [%o1 + 0x048], %f2
        fsrc2           %f12, %f28
        ldd             [%o1 + 0x050], %f4
        fsrc2           %f14, %f30
        stda            %f16, [%o0] ASI_BLK_P
        ldd             [%o1 + 0x058], %f6
        fsrc2           %f0, %f16
        ldd             [%o1 + 0x060], %f8
        fsrc2           %f2, %f18
        ldd             [%o1 + 0x068], %f10
        fsrc2           %f4, %f20
        ldd             [%o1 + 0x070], %f12
        fsrc2           %f6, %f22
        add             %o0, 0x40, %o0
        ldd             [%o1 + 0x078], %f14
        fsrc2           %f8, %f24
        fsrc2           %f10, %f26
        fsrc2           %f12, %f28
        fsrc2           %f14, %f30
        stda            %f16, [%o0] ASI_BLK_P
        membar          #Sync
        VISExitHalf
        ba,pt           %xcc, 5f
         nop

9:
        VISEntry
        ldub            [%g6 + TI_FAULT_CODE], %g3
        mov             %o0, %g1
        cmp             %g3, 0
        rd              %asi, %g3
        be,a,pt         %icc, 1f
         wr             %g0, ASI_BLK_P, %asi
        wr              %g0, ASI_BLK_COMMIT_P, %asi
1:      ldda            [%o1] ASI_BLK_P, %f0
        add             %o1, 0x40, %o1
        ldda            [%o1] ASI_BLK_P, %f16
```

```
        add             %o1, 0x40, %o1
        sethi           %hi(PAGE_SIZE), %o2
1:      TOUCH(f0, f2, f4, f6, f8, f10, f12, f14)
        ldda            [%o1] ASI_BLK_P, %f32
        stda            %f48, [%o0] %asi
        add             %o1, 0x40, %o1
        sub             %o2, 0x40, %o2
        add             %o0, 0x40, %o0
        TOUCH(f16, f18, f20, f22, f24, f26, f28, f30)
        ldda            [%o1] ASI_BLK_P, %f0
        stda            %f48, [%o0] %asi
        add             %o1, 0x40, %o1
        sub             %o2, 0x40, %o2
        add             %o0, 0x40, %o0
        TOUCH(f32, f34, f36, f38, f40, f42, f44, f46)
        ldda            [%o1] ASI_BLK_P, %f16
        stda            %f48, [%o0] %asi
        sub             %o2, 0x40, %o2
        add             %o1, 0x40, %o1
        cmp             %o2, PAGE_SIZE_REM
        bne,pt          %xcc, 1b
         add            %o0, 0x40, %o0
#if (PAGE_SHIFT == 16)
        TOUCH(f0, f2, f4, f6, f8, f10, f12, f14)
        ldda            [%o1] ASI_BLK_P, %f32
        stda            %f48, [%o0] %asi
        add             %o1, 0x40, %o1
        sub             %o2, 0x40, %o2
        add             %o0, 0x40, %o0
        TOUCH(f16, f18, f20, f22, f24, f26, f28, f30)
        ldda            [%o1] ASI_BLK_P, %f0
        stda            %f48, [%o0] %asi
        add             %o1, 0x40, %o1
        sub             %o2, 0x40, %o2
        add             %o0, 0x40, %o0
        membar          #Sync
        stda            %f32, [%o0] %asi
        add             %o0, 0x40, %o0
        stda            %f0, [%o0] %asi
#else
        membar          #Sync
        stda            %f0, [%o0] %asi
        add             %o0, 0x40, %o0
        stda            %f16, [%o0] %asi
#endif
        membar          #Sync
        wr              %g3, 0x0, %asi
        VISExit

5:
        stxa            %g0, [%g1] ASI_DMMU_DEMAP
        membar          #Sync

        sethi           %hi(DCACHE_SIZE), %g2
        stxa            %g0, [%g1 + %g2] ASI_DMMU_DEMAP
        membar          #Sync

        retl
         stw            %o4, [%g6 + TI_PRE_COUNT]
```

```
        .size           copy_user_page, .-copy_user_page

        .globl          cheetah_patch_copy_page
cheetah_patch_copy_page:
        sethi           %hi(0x01000000), %o1    ! NOP
        sethi           %hi(cheetah_copy_page_insn), %o0
        or              %o0, %lo(cheetah_copy_page_insn), %o0
        stw             %o1, [%o0]
        membar          #StoreStore
        flush           %o0
        retl
         nop
---------------------------------------------------------------------
linux/arch/sparc/lib/copy_user.S
---------------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/* copy_user.S: Sparc optimized copy_from_user and copy_to_user code.
 *
 *  Copyright(C) 1995 Linus Torvalds
 *  Copyright(C) 1996 David S. Miller
 *  Copyright(C) 1996 Eddie C. Dost
 *  Copyright(C) 1996,1998 Jakub Jelinek
 *
 * derived from:
 *      e-mail between David and Eddie.
 *
 * Returns 0 if successful, otherwise count of bytes not copied yet
 */

#include <asm/ptrace.h>
#include <asm/asmmacro.h>
#include <asm/page.h>
#include <asm/thread_info.h>
#include <asm/export.h>

/* Work around cpp -rob */
#define ALLOC #alloc
#define EXECINSTR #execinstr
#define EX(x,y,a,b)                             \
98:     x,y;                                    \
        .section .fixup,ALLOC,EXECINSTR;        \
        .align  4;                              \
99:     ba fixupretl;                           \
         a, b, %g3;                             \
        .section __ex_table,ALLOC;              \
        .align  4;                              \
        .word   98b, 99b;                       \
        .text;                                  \
        .align  4

#define EX2(x,y,c,d,e,a,b)                      \
98:     x,y;                                    \
        .section .fixup,ALLOC,EXECINSTR;        \
        .align  4;                              \
99:     c, d, e;                                \
        ba fixupretl;                           \
         a, b, %g3;                             \
        .section __ex_table,ALLOC;              \
```

```
        .align  4;                              \
        .word   98b, 99b;                       \
        .text;                                  \
        .align  4

#define EXO2(x,y)                               \
98:     x, y;                                   \
        .section __ex_table,ALLOC;              \
        .align  4;                              \
        .word   98b, 97f;                       \
        .text;                                  \
        .align  4

#define EXT(start,end,handler)                  \
        .section __ex_table,ALLOC;              \
        .align  4;                              \
        .word   start, 0, end, handler;         \
        .text;                                  \
        .align  4

/* Please do not change following macros unless you change logic used
 * in .fixup at the end of this file as well
 */

/* Both these macros have to start with exactly the same insn */
#define MOVE_BIGCHUNK(src, dst, offset, t0, t1, t2, t3, t4, t5, t6, t7) \
        ldd     [%src + (offset) + 0x00], %t0; \
        ldd     [%src + (offset) + 0x08], %t2; \
        ldd     [%src + (offset) + 0x10], %t4; \
        ldd     [%src + (offset) + 0x18], %t6; \
        st      %t0, [%dst + (offset) + 0x00]; \
        st      %t1, [%dst + (offset) + 0x04]; \
        st      %t2, [%dst + (offset) + 0x08]; \
        st      %t3, [%dst + (offset) + 0x0c]; \
        st      %t4, [%dst + (offset) + 0x10]; \
        st      %t5, [%dst + (offset) + 0x14]; \
        st      %t6, [%dst + (offset) + 0x18]; \
        st      %t7, [%dst + (offset) + 0x1c];

#define MOVE_BIGALIGNCHUNK(src, dst, offset, t0, t1, t2, t3, t4, t5, t6, t7) \
        ldd     [%src + (offset) + 0x00], %t0; \
        ldd     [%src + (offset) + 0x08], %t2; \
        ldd     [%src + (offset) + 0x10], %t4; \
        ldd     [%src + (offset) + 0x18], %t6; \
        std     %t0, [%dst + (offset) + 0x00]; \
        std     %t2, [%dst + (offset) + 0x08]; \
        std     %t4, [%dst + (offset) + 0x10]; \
        std     %t6, [%dst + (offset) + 0x18];

#define MOVE_LASTCHUNK(src, dst, offset, t0, t1, t2, t3) \
        ldd     [%src - (offset) - 0x10], %t0; \
        ldd     [%src - (offset) - 0x08], %t2; \
        st      %t0, [%dst - (offset) - 0x10]; \
        st      %t1, [%dst - (offset) - 0x0c]; \
        st      %t2, [%dst - (offset) - 0x08]; \
        st      %t3, [%dst - (offset) - 0x04];

#define MOVE_HALFCHUNK(src, dst, offset, t0, t1, t2, t3) \
        lduh    [%src + (offset) + 0x00], %t0; \
```

```
        lduh    [%src + (offset) + 0x02], %t1; \
        lduh    [%src + (offset) + 0x04], %t2; \
        lduh    [%src + (offset) + 0x06], %t3; \
        sth     %t0, [%dst + (offset) + 0x00]; \
        sth     %t1, [%dst + (offset) + 0x02]; \
        sth     %t2, [%dst + (offset) + 0x04]; \
        sth     %t3, [%dst + (offset) + 0x06];

#define MOVE_SHORTCHUNK(src, dst, offset, t0, t1) \
        ldub    [%src - (offset) - 0x02], %t0; \
        ldub    [%src - (offset) - 0x01], %t1; \
        stb     %t0, [%dst - (offset) - 0x02]; \
        stb     %t1, [%dst - (offset) - 0x01];

        .text
        .align  4

        .globl  __copy_user_begin
__copy_user_begin:

        .globl  __copy_user
        EXPORT_SYMBOL(__copy_user)
dword_align:
        andcc   %o1, 1, %g0
        be      4f
         andcc  %o1, 2, %g0

        EXO2(ldub [%o1], %g2)
        add     %o1, 1, %o1
        EXO2(stb %g2, [%o0])
        sub     %o2, 1, %o2
        bne     3f
         add    %o0, 1, %o0

        EXO2(lduh [%o1], %g2)
        add     %o1, 2, %o1
        EXO2(sth %g2, [%o0])
        sub     %o2, 2, %o2
        b       3f
         add    %o0, 2, %o0
4:
        EXO2(lduh [%o1], %g2)
        add     %o1, 2, %o1
        EXO2(sth %g2, [%o0])
        sub     %o2, 2, %o2
        b       3f
         add    %o0, 2, %o0

__copy_user:    /* %o0=dst %o1=src %o2=len */
        xor     %o0, %o1, %o4
1:
        andcc   %o4, 3, %o5
2:
        bne     cannot_optimize
         cmp    %o2, 15

        bleu    short_aligned_end
         andcc  %o1, 3, %g0
```

```
        bne     dword_align
3:
         andcc  %o1, 4, %g0

        be      2f
         mov    %o2, %g1

        EXO2(ld [%o1], %o4)
        sub     %g1, 4, %g1
        EXO2(st %o4, [%o0])
        add     %o1, 4, %o1
        add     %o0, 4, %o0
2:
        andcc   %g1, 0xffffff80, %g7
        be      3f
         andcc  %o0, 4, %g0

        be      ldd_std + 4
5:
        MOVE_BIGCHUNK(o1, o0, 0x00, o2, o3, o4, o5, g2, g3, g4, g5)
        MOVE_BIGCHUNK(o1, o0, 0x20, o2, o3, o4, o5, g2, g3, g4, g5)
        MOVE_BIGCHUNK(o1, o0, 0x40, o2, o3, o4, o5, g2, g3, g4, g5)
        MOVE_BIGCHUNK(o1, o0, 0x60, o2, o3, o4, o5, g2, g3, g4, g5)
80:
        EXT(5b, 80b, 50f)
        subcc   %g7, 128, %g7
        add     %o1, 128, %o1
        bne     5b
         add    %o0, 128, %o0
3:
        andcc   %g1, 0x70, %g7
        be      copy_user_table_end
         andcc  %g1, 8, %g0

        sethi   %hi(copy_user_table_end), %o5
        srl     %g7, 1, %o4
        add     %g7, %o4, %o4
        add     %o1, %g7, %o1
        sub     %o5, %o4, %o5
        jmpl    %o5 + %lo(copy_user_table_end), %g0
         add    %o0, %g7, %o0

copy_user_table:
        MOVE_LASTCHUNK(o1, o0, 0x60, g2, g3, g4, g5)
        MOVE_LASTCHUNK(o1, o0, 0x50, g2, g3, g4, g5)
        MOVE_LASTCHUNK(o1, o0, 0x40, g2, g3, g4, g5)
        MOVE_LASTCHUNK(o1, o0, 0x30, g2, g3, g4, g5)
        MOVE_LASTCHUNK(o1, o0, 0x20, g2, g3, g4, g5)
        MOVE_LASTCHUNK(o1, o0, 0x10, g2, g3, g4, g5)
        MOVE_LASTCHUNK(o1, o0, 0x00, g2, g3, g4, g5)
copy_user_table_end:
        EXT(copy_user_table, copy_user_table_end, 51f)
        be      copy_user_last7
         andcc  %g1, 4, %g0

        EX(ldd  [%o1], %g2, and %g1, 0xf)
        add     %o0, 8, %o0
        add     %o1, 8, %o1
        EX(st   %g2, [%o0 - 0x08], and %g1, 0xf)
```

```
        EX2(st  %g3, [%o0 - 0x04], and %g1, 0xf, %g1, sub %g1, 4)
copy_user_last7:
        be      1f
         andcc  %g1, 2, %g0

        EX(ld   [%o1], %g2, and %g1, 7)
        add     %o1, 4, %o1
        EX(st   %g2, [%o0], and %g1, 7)
        add     %o0, 4, %o0
1:
        be      1f
         andcc  %g1, 1, %g0

        EX(lduh [%o1], %g2, and %g1, 3)
        add     %o1, 2, %o1
        EX(sth  %g2, [%o0], and %g1, 3)
        add     %o0, 2, %o0
1:
        be      1f
         nop

        EX(ldub [%o1], %g2, add %g0, 1)
        EX(stb  %g2, [%o0], add %g0, 1)
1:
        retl
         clr    %o0

ldd_std:
        MOVE_BIGALIGNCHUNK(o1, o0, 0x00, o2, o3, o4, o5, g2, g3, g4, g5)
        MOVE_BIGALIGNCHUNK(o1, o0, 0x20, o2, o3, o4, o5, g2, g3, g4, g5)
        MOVE_BIGALIGNCHUNK(o1, o0, 0x40, o2, o3, o4, o5, g2, g3, g4, g5)
        MOVE_BIGALIGNCHUNK(o1, o0, 0x60, o2, o3, o4, o5, g2, g3, g4, g5)
81:
        EXT(ldd_std, 81b, 52f)
        subcc   %g7, 128, %g7
        add     %o1, 128, %o1
        bne     ldd_std
         add    %o0, 128, %o0

        andcc   %g1, 0x70, %g7
        be      copy_user_table_end
         andcc  %g1, 8, %g0

        sethi   %hi(copy_user_table_end), %o5
        srl     %g7, 1, %o4
        add     %g7, %o4, %o4
        add     %o1, %g7, %o1
        sub     %o5, %o4, %o5
        jmpl    %o5 + %lo(copy_user_table_end), %g0
         add    %o0, %g7, %o0

cannot_optimize:
        bleu    short_end
         cmp    %o5, 2

        bne     byte_chunk
         and    %o2, 0xfffffff0, %o3

        andcc   %o1, 1, %g0
```

```
        be      10f
         nop

        EXO2(ldub [%o1], %g2)
        add     %o1, 1, %o1
        EXO2(stb %g2, [%o0])
        sub     %o2, 1, %o2
        andcc   %o2, 0xfffffff0, %o3
        be      short_end
         add    %o0, 1, %o0
10:
        MOVE_HALFCHUNK(o1, o0, 0x00, g2, g3, g4, g5)
        MOVE_HALFCHUNK(o1, o0, 0x08, g2, g3, g4, g5)
82:
        EXT(10b, 82b, 53f)
        subcc   %o3, 0x10, %o3
        add     %o1, 0x10, %o1
        bne     10b
         add    %o0, 0x10, %o0
        b       2f
         and    %o2, 0xe, %o3

byte_chunk:
        MOVE_SHORTCHUNK(o1, o0, -0x02, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x04, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x06, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x08, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x0a, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x0c, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x0e, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, -0x10, g2, g3)
83:
        EXT(byte_chunk, 83b, 54f)
        subcc   %o3, 0x10, %o3
        add     %o1, 0x10, %o1
        bne     byte_chunk
         add    %o0, 0x10, %o0

short_end:
        and     %o2, 0xe, %o3
2:
        sethi   %hi(short_table_end), %o5
        sll     %o3, 3, %o4
        add     %o0, %o3, %o0
        sub     %o5, %o4, %o5
        add     %o1, %o3, %o1
        jmpl    %o5 + %lo(short_table_end), %g0
         andcc  %o2, 1, %g0
84:
        MOVE_SHORTCHUNK(o1, o0, 0x0c, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, 0x0a, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, 0x08, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, 0x06, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, 0x04, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, 0x02, g2, g3)
        MOVE_SHORTCHUNK(o1, o0, 0x00, g2, g3)
short_table_end:
        EXT(84b, short_table_end, 55f)
        be      1f
```

```
         nop
        EX(ldub [%o1], %g2, add %g0, 1)
        EX(stb  %g2, [%o0], add %g0, 1)
1:
        retl
         clr    %o0

short_aligned_end:
        bne     short_end
         andcc  %o2, 8, %g0

        be      1f
         andcc  %o2, 4, %g0

        EXO2(ld [%o1 + 0x00], %g2)
        EXO2(ld [%o1 + 0x04], %g3)
        add     %o1, 8, %o1
        EXO2(st %g2, [%o0 + 0x00])
        EX(st   %g3, [%o0 + 0x04], sub %o2, 4)
        add     %o0, 8, %o0
1:
        b       copy_user_last7
         mov    %o2, %g1

        .section .fixup,#alloc,#execinstr
        .align  4
97:
        mov     %o2, %g3
fixupretl:
        retl
         mov    %g3, %o0

/* exception routine sets %g2 to (broken_insn - first_insn)>>2 */
50:
/* This magic counts how many bytes are left when crash in MOVE_BIGCHUNK
 * happens. This is derived from the amount ldd reads, st stores, etc.
 * x = g2 % 12;
 * g3 = g1 + g7 - ((g2 / 12) * 32 + (x < 4) ? 0 : (x - 4) * 4);
 * o0 += (g2 / 12) * 32;
 */
        cmp     %g2, 12
        add     %o0, %g7, %o0
        bcs     1f
         cmp    %g2, 24
        bcs     2f
         cmp    %g2, 36
        bcs     3f
         nop
        sub     %g2, 12, %g2
        sub     %g7, 32, %g7
3:      sub     %g2, 12, %g2
        sub     %g7, 32, %g7
2:      sub     %g2, 12, %g2
        sub     %g7, 32, %g7
1:      cmp     %g2, 4
        bcs,a   60f
         clr    %g2
        sub     %g2, 4, %g2
        sll     %g2, 2, %g2
```

```
60:     and     %g1, 0x7f, %g3
        sub     %o0, %g7, %o0
        add     %g3, %g7, %g3
        ba      fixupretl
         sub    %g3, %g2, %g3
51:
/* i = 41 - g2; j = i % 6;
 * g3 = (g1 & 15) + (i / 6) * 16 + (j < 4) ? (j + 1) * 4 : 16;
 * o0 -= (i / 6) * 16 + 16;
 */
        neg     %g2
        and     %g1, 0xf, %g1
        add     %g2, 41, %g2
        add     %o0, %g1, %o0
1:      cmp     %g2, 6
        bcs,a   2f
         cmp    %g2, 4
        add     %g1, 16, %g1
        b       1b
         sub    %g2, 6, %g2
2:      bcc,a   2f
         mov    16, %g2
        inc     %g2
        sll     %g2, 2, %g2
2:      add     %g1, %g2, %g3
        ba      fixupretl
         sub    %o0, %g3, %o0
52:
/* g3 = g1 + g7 - (g2 / 8) * 32 + (g2 & 4) ? (g2 & 3) * 8 : 0;
   o0 += (g2 / 8) * 32 */
        andn    %g2, 7, %g4
        add     %o0, %g7, %o0
        andcc   %g2, 4, %g0
        and     %g2, 3, %g2
        sll     %g4, 2, %g4
        sll     %g2, 3, %g2
        bne     60b
         sub    %g7, %g4, %g7
        ba      60b
         clr    %g2
53:
/* g3 = o3 + (o2 & 15) - (g2 & 8) - (g2 & 4) ? (g2 & 3) * 2 : 0;
   o0 += (g2 & 8) */
        and     %g2, 3, %g4
        andcc   %g2, 4, %g0
        and     %g2, 8, %g2
        sll     %g4, 1, %g4
        be      1f
         add    %o0, %g2, %o0
        add     %g2, %g4, %g2
1:      and     %o2, 0xf, %g3
        add     %g3, %o3, %g3
        ba      fixupretl
         sub    %g3, %g2, %g3
54:
/* g3 = o3 + (o2 & 15) - (g2 / 4) * 2 - (g2 & 2) ? (g2 & 1) : 0;
   o0 += (g2 / 4) * 2 */
        srl     %g2, 2, %o4
        and     %g2, 1, %o5
```

```
        srl     %g2, 1, %g2
        add     %o4, %o4, %o4
        and     %o5, %g2, %o5
        and     %o2, 0xf, %o2
        add     %o0, %o4, %o0
        sub     %o3, %o5, %o3
        sub     %o2, %o4, %o2
        ba      fixupretl
         add    %o2, %o3, %g3
55:
/* i = 27 - g2;
   g3 = (o2 & 1) + i / 4 * 2 + !(i & 3);
   o0 -= i / 4 * 2 + 1 */
        neg     %g2
        and     %o2, 1, %o2
        add     %g2, 27, %g2
        srl     %g2, 2, %o5
        andcc   %g2, 3, %g0
        mov     1, %g2
        add     %o5, %o5, %o5
        be,a    1f
         clr    %g2
1:      add     %g2, %o5, %g3
        sub     %o0, %g3, %o0
        ba      fixupretl
         add    %g3, %o2, %g3

        .globl  __copy_user_end
__copy_user_end:
------------------------------------------------------------------
linux/arch/sparc/lib/COPYING.LIB
------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
                    675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
```

```
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright
the library, and (2) offer you this license which gives you legal
permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain
that everyone understands that there is no warranty for this free
library.  If the library is modified by someone else and passed on, we
want its recipients to know that what they have is not the original
version, so that any problems introduced by others will not reflect on
the original authors' reputations.


  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that companies distributing free
software will individually obtain patent licenses, thus in effect
transforming the program into proprietary software.  To prevent this,
we have made it clear that any patent must be licensed for everyone's
free use or not licensed at all.

  Most GNU software, including some libraries, is covered by the ordinary
GNU General Public License, which was designed for utility programs.  This
license, the GNU Library General Public License, applies to certain
designated libraries.  This license is quite different from the ordinary
one; be sure to read it in full, and don't assume that anything in it is
the same as in the ordinary license.

  The reason we have a separate public license for some libraries is that
they blur the distinction we usually make between modifying or adding to a
program and simply using it.  Linking a program with a library, without
changing the library, is in some sense simply using the library, and is
analogous to running a utility program or application program.  However, in
a textual and legal sense, the linked executable is a combined work, a
derivative of the original library, and the ordinary General Public License
treats it as such.

  Because of this blurred distinction, using the ordinary General
Public License for libraries did not effectively promote software
sharing, because most developers did not use the libraries.  We
concluded that weaker conditions might promote sharing better.

  However, unrestricted linking of non-free programs would deprive the
users of those programs of all benefit from the free status of the
libraries themselves.  This Library General Public License is intended to
```

permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

  Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

  Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

```
  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.


  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library.  To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
```

instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also compile or

link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

    b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

    c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

    d) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

  It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

  7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise

permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library
    facilities. This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License. Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License. However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Library or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made

generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Library General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

                            NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A

```
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

                     END OF TERMS AND CONDITIONS


     Appendix: How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free
    Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
---------------------------------------------------------------------
linux/arch/sparc/lib/copy_in_user.S
---------------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/* copy_in_user.S: Copy from userspace to userspace.
 *
 * Copyright (C) 1999, 2000, 2004 David S. Miller (davem@redhat.com)
 */
```

```
#include <linux/linkage.h>
#include <asm/asi.h>
#include <asm/export.h>

#define XCC xcc

#define EX(x,y,z)               \
98:     x,y;                    \
        .section __ex_table,"a";\
        .align 4;               \
        .word 98b, z;           \
        .text;                  \
        .align 4;

#define EX_O4(x,y) EX(x,y,__retl_o4_plus_8)
#define EX_O2_4(x,y) EX(x,y,__retl_o2_plus_4)
#define EX_O2_1(x,y) EX(x,y,__retl_o2_plus_1)

        .register       %g2,#scratch
        .register       %g3,#scratch

        .text
__retl_o4_plus_8:
        add     %o4, %o2, %o4
        retl
         add    %o4, 8, %o0
__retl_o2_plus_4:
        retl
         add    %o2, 4, %o0
__retl_o2_plus_1:
        retl
         add    %o2, 1, %o0

        .align  32

        /* Don't try to get too fancy here, just nice and
         * simple.  This is predominantly used for well aligned
         * small copies in the compat layer.  It is also used
         * to copy register windows around during thread cloning.
         */

ENTRY(raw_copy_in_user) /* %o0=dst, %o1=src, %o2=len */
        cmp             %o2, 0
        be,pn           %XCC, 85f
         or             %o0, %o1, %o3
        cmp             %o2, 16
        bleu,a,pn       %XCC, 80f
         or             %o3, %o2, %o3

        /* 16 < len <= 64 */
        andcc           %o3, 0x7, %g0
        bne,pn          %XCC, 90f
         nop

        andn            %o2, 0x7, %o4
        and             %o2, 0x7, %o2
1:      subcc           %o4, 0x8, %o4
        EX_O4(ldxa [%o1] %asi, %o5)
        EX_O4(stxa %o5, [%o0] %asi)
```

```
        add             %o1, 0x8, %o1
        bgu,pt          %XCC, 1b
         add            %o0, 0x8, %o0
        andcc           %o2, 0x4, %g0
        be,pt           %XCC, 1f
         nop
        sub             %o2, 0x4, %o2
        EX_O2_4(lduwa [%o1] %asi, %o5)
        EX_O2_4(stwa %o5, [%o0] %asi)
        add             %o1, 0x4, %o1
        add             %o0, 0x4, %o0
1:      cmp             %o2, 0
        be,pt           %XCC, 85f
         nop
        ba,pt           %xcc, 90f
         nop

80:     /* 0 < len <= 16 */
        andcc           %o3, 0x3, %g0
        bne,pn          %XCC, 90f
         nop

82:
        subcc           %o2, 4, %o2
        EX_O2_4(lduwa [%o1] %asi, %g1)
        EX_O2_4(stwa %g1, [%o0] %asi)
        add             %o1, 4, %o1
        bgu,pt          %XCC, 82b
         add            %o0, 4, %o0

85:     retl
         clr            %o0

        .align  32
90:
        subcc           %o2, 1, %o2
        EX_O2_1(lduba [%o1] %asi, %g1)
        EX_O2_1(stba %g1, [%o0] %asi)
        add             %o1, 1, %o1
        bgu,pt          %XCC, 90b
         add            %o0, 1, %o0
        retl
         clr            %o0
ENDPROC(raw_copy_in_user)
EXPORT_SYMBOL(raw_copy_in_user)
-----------------------------------------------------------------
linux/arch/alpha/lib/copy_page.S
-----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/*
 * arch/alpha/lib/copy_page.S
 *
 * Copy an entire page.
 */
#include <asm/export.h>
        .text
        .align 4
        .global copy_page
        .ent copy_page
```

```
copy_page:
        .prologue 0

        lda     $18,128
        nop
        unop
        nop

1:      ldq     $0,0($17)
        ldq     $1,8($17)
        ldq     $2,16($17)
        ldq     $3,24($17)

        ldq     $4,32($17)
        ldq     $5,40($17)
        ldq     $6,48($17)
        ldq     $7,56($17)

        stq     $0,0($16)
        subq    $18,1,$18
        stq     $1,8($16)
        addq    $17,64,$17

        stq     $2,16($16)
        stq     $3,24($16)
        stq     $4,32($16)
        stq     $5,40($16)

        stq     $6,48($16)
        stq     $7,56($16)
        addq    $16,64,$16
        bne     $18, 1b

        ret
        nop
        unop
        nop

        .end copy_page
        EXPORT_SYMBOL(copy_page)
----------------------------------------------------------------
linux/arch/alpha/lib/copy_user.S
----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
/*
 * arch/alpha/lib/copy_user.S
 *
 * Copy to/from user space, handling exceptions as we go..  This
 * isn't exactly pretty.
 *
 * This is essentially the same as "memcpy()", but with a few twists.
 * Notably, we have to make sure that $0 is always up-to-date and
 * contains the right "bytes left to copy" value (and that it is updated
 * only _after_ a successful copy). There is also some rather minor
 * exception setup stuff..
 */

#include <asm/export.h>
```

```
/* Allow an exception for an insn; exit if we get one.  */
#define EXI(x,y...)                     \
        99: x,##y;                      \
        .section __ex_table,"a";        \
        .long 99b - .;                  \
        lda $31, $exitin-99b($31);      \
        .previous

#define EXO(x,y...)                     \
        99: x,##y;                      \
        .section __ex_table,"a";        \
        .long 99b - .;                  \
        lda $31, $exitout-99b($31);     \
        .previous

        .set noat
        .align 4
        .globl __copy_user
        .ent __copy_user
__copy_user:
        .prologue 0
        mov $18,$0
        and $16,7,$3
        beq $0,$35
        beq $3,$36
        subq $3,8,$3
        .align 4
$37:
        EXI( ldq_u $1,0($17) )
        EXO( ldq_u $2,0($16) )
        extbl $1,$17,$1
        mskbl $2,$16,$2
        insbl $1,$16,$1
        addq $3,1,$3
        bis $1,$2,$1
        EXO( stq_u $1,0($16) )
        subq $0,1,$0
        addq $16,1,$16
        addq $17,1,$17
        beq $0,$41
        bne $3,$37
$36:
        and $17,7,$1
        bic $0,7,$4
        beq $1,$43
        beq $4,$48
        EXI( ldq_u $3,0($17) )
        .align 4
$50:
        EXI( ldq_u $2,8($17) )
        subq $4,8,$4
        extql $3,$17,$3
        extqh $2,$17,$1
        bis $3,$1,$1
        EXO( stq $1,0($16) )
        addq $17,8,$17
        subq $0,8,$0
        addq $16,8,$16
        bis $2,$2,$3
```

```
        bne $4,$50
$48:
        beq $0,$41
        .align 4
$57:
        EXI( ldq_u $1,0($17) )
        EXO( ldq_u $2,0($16) )
        extbl $1,$17,$1
        mskbl $2,$16,$2
        insbl $1,$16,$1
        bis $1,$2,$1
        EXO( stq_u $1,0($16) )
        subq $0,1,$0
        addq $16,1,$16
        addq $17,1,$17
        bne $0,$57
        br $31,$41
        .align 4
$43:
        beq $4,$65
        .align 4
$66:
        EXI( ldq $1,0($17) )
        subq $4,8,$4
        EXO( stq $1,0($16) )
        addq $17,8,$17
        subq $0,8,$0
        addq $16,8,$16
        bne $4,$66
$65:
        beq $0,$41
        EXI( ldq $2,0($17) )
        EXO( ldq $1,0($16) )
        mskql $2,$0,$2
        mskqh $1,$0,$1
        bis $2,$1,$2
        EXO( stq $2,0($16) )
        bis $31,$31,$0
$41:
$35:
$exitin:
$exitout:
        ret $31,($26),1

        .end __copy_user
EXPORT_SYMBOL(__copy_user)
----------------------------------------------------------------
linux/arch/arm64/lib/copy_page.S
----------------------------------------------------------------
/*
 * Copyright (C) 2012 ARM Ltd.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
```

```
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */

#include <linux/linkage.h>
#include <linux/const.h>
#include <asm/assembler.h>
#include <asm/page.h>
#include <asm/cpufeature.h>
#include <asm/alternative.h>

/*
 * Copy a page from src to dest (both are page aligned)
 *
 * Parameters:
 *      x0 - dest
 *      x1 - src
 */
ENTRY(copy_page)
alternative_if ARM64_HAS_NO_HW_PREFETCH
        // Prefetch three cache lines ahead.
        prfm    pldl1strm, [x1, #128]
        prfm    pldl1strm, [x1, #256]
        prfm    pldl1strm, [x1, #384]
alternative_else_nop_endif

        ldp     x2, x3, [x1]
        ldp     x4, x5, [x1, #16]
        ldp     x6, x7, [x1, #32]
        ldp     x8, x9, [x1, #48]
        ldp     x10, x11, [x1, #64]
        ldp     x12, x13, [x1, #80]
        ldp     x14, x15, [x1, #96]
        ldp     x16, x17, [x1, #112]

        mov     x18, #(PAGE_SIZE - 128)
        add     x1, x1, #128
1:
        subs    x18, x18, #128

alternative_if ARM64_HAS_NO_HW_PREFETCH
        prfm    pldl1strm, [x1, #384]
alternative_else_nop_endif

        stnp    x2, x3, [x0]
        ldp     x2, x3, [x1]
        stnp    x4, x5, [x0, #16]
        ldp     x4, x5, [x1, #16]
        stnp    x6, x7, [x0, #32]
        ldp     x6, x7, [x1, #32]
        stnp    x8, x9, [x0, #48]
        ldp     x8, x9, [x1, #48]
        stnp    x10, x11, [x0, #64]
        ldp     x10, x11, [x1, #64]
        stnp    x12, x13, [x0, #80]
        ldp     x12, x13, [x1, #80]
        stnp    x14, x15, [x0, #96]
```

```
        ldp     x14, x15, [x1, #96]
        stnp    x16, x17, [x0, #112]
        ldp     x16, x17, [x1, #112]

        add     x0, x0, #128
        add     x1, x1, #128

        b.gt    1b

        stnp    x2, x3, [x0]
        stnp    x4, x5, [x0, #16]
        stnp    x6, x7, [x0, #32]
        stnp    x8, x9, [x0, #48]
        stnp    x10, x11, [x0, #64]
        stnp    x12, x13, [x0, #80]
        stnp    x14, x15, [x0, #96]
        stnp    x16, x17, [x0, #112]

        ret
ENDPROC(copy_page)
----------------------------------------------------------------
linux/arch/arm64/lib/copy_from_user.S
----------------------------------------------------------------
/*
 * Copyright (C) 2012 ARM Ltd.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */

#include <linux/linkage.h>

#include <asm/cache.h>
#include <asm/asm-uaccess.h>

/*
 * Copy from user space to a kernel buffer (alignment handled by the hardware)
 *
 * Parameters:
 *      x0 - to
 *      x1 - from
 *      x2 - n
 * Returns:
 *      x0 - bytes not copied
 */

        .macro ldrb1 ptr, regB, val
        uao_user_alternative 9998f, ldrb, ldtrb, \ptr, \regB, \val
        .endm
```

```
        .macro strb1 ptr, regB, val
        strb \ptr, [\regB], \val
        .endm

        .macro ldrh1 ptr, regB, val
        uao_user_alternative 9998f, ldrh, ldtrh, \ptr, \regB, \val
        .endm

        .macro strh1 ptr, regB, val
        strh \ptr, [\regB], \val
        .endm

        .macro ldr1 ptr, regB, val
        uao_user_alternative 9998f, ldr, ldtr, \ptr, \regB, \val
        .endm

        .macro str1 ptr, regB, val
        str \ptr, [\regB], \val
        .endm

        .macro ldp1 ptr, regB, regC, val
        uao_ldp 9998f, \ptr, \regB, \regC, \val
        .endm

        .macro stp1 ptr, regB, regC, val
        stp \ptr, \regB, [\regC], \val
        .endm

end     .req    x5
ENTRY(__arch_copy_from_user)
        uaccess_enable_not_uao x3, x4
        add     end, x0, x2
#include "copy_template.S"
        uaccess_disable_not_uao x3
        mov     x0, #0                          // Nothing to copy
        ret
ENDPROC(__arch_copy_from_user)

        .section .fixup,"ax"
        .align  2
9998:   sub     x0, end, dst                    // bytes not copied
        ret
        .previous
-----------------------------------------------------------------
linux/arch/arm64/lib/copy_to_user.S
-----------------------------------------------------------------
/*
 * Copyright (C) 2012 ARM Ltd.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
```

```
 * along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */

#include <linux/linkage.h>

#include <asm/cache.h>
#include <asm/asm-uaccess.h>

/*
 * Copy to user space from a kernel buffer (alignment handled by the hardware)
 *
 * Parameters:
 *      x0 - to
 *      x1 - from
 *      x2 - n
 * Returns:
 *      x0 - bytes not copied
 */
        .macro ldrb1 ptr, regB, val
        ldrb  \ptr, [\regB], \val
        .endm

        .macro strb1 ptr, regB, val
        uao_user_alternative 9998f, strb, sttrb, \ptr, \regB, \val
        .endm

        .macro ldrh1 ptr, regB, val
        ldrh  \ptr, [\regB], \val
        .endm

        .macro strh1 ptr, regB, val
        uao_user_alternative 9998f, strh, sttrh, \ptr, \regB, \val
        .endm

        .macro ldr1 ptr, regB, val
        ldr \ptr, [\regB], \val
        .endm

        .macro str1 ptr, regB, val
        uao_user_alternative 9998f, str, sttr, \ptr, \regB, \val
        .endm

        .macro ldp1 ptr, regB, regC, val
        ldp \ptr, \regB, [\regC], \val
        .endm

        .macro stp1 ptr, regB, regC, val
        uao_stp 9998f, \ptr, \regB, \regC, \val
        .endm

end     .req    x5
ENTRY(__arch_copy_to_user)
        uaccess_enable_not_uao x3, x4
        add     end, x0, x2
#include "copy_template.S"
        uaccess_disable_not_uao x3
        mov     x0, #0
        ret
ENDPROC(__arch_copy_to_user)
```

```
        .section .fixup,"ax"
        .align  2
9998:   sub     x0, end, dst                    // bytes not copied
        ret
        .previous
------------------------------------------------------------------
linux/arch/arm64/lib/copy_template.S
------------------------------------------------------------------
/*
 * Copyright (C) 2013 ARM Ltd.
 * Copyright (C) 2013 Linaro.
 *
 * This code is based on glibc cortex strings work originally authored by Linaro
 * and re-licensed under GPLv2 for the Linux kernel. The original code can
 * be found @
 *
 * http://bazaar.launchpad.net/~linaro-toolchain-dev/cortex-strings/trunk/
 * files/head:/src/aarch64/
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */


/*
 * Copy a buffer from src to dest (alignment handled by the hardware)
 *
 * Parameters:
 *      x0 - dest
 *      x1 - src
 *      x2 - n
 * Returns:
 *      x0 - dest
 */
dstin   .req    x0
src     .req    x1
count   .req    x2
tmp1    .req    x3
tmp1w   .req    w3
tmp2    .req    x4
tmp2w   .req    w4
dst     .req    x6

A_l     .req    x7
A_h     .req    x8
B_l     .req    x9
B_h     .req    x10
C_l     .req    x11
C_h     .req    x12
```

```
D_l     .req    x13
D_h     .req    x14

        mov     dst, dstin
        cmp     count, #16
        /*When memory length is less than 16, the accessed are not aligned.*/
        b.lo    .Ltiny15

        neg     tmp2, src
        ands    tmp2, tmp2, #15/* Bytes to reach alignment. */
        b.eq    .LSrcAligned
        sub     count, count, tmp2
        /*
        * Copy the leading memory data from src to dst in an increasing
        * address order.By this way,the risk of overwriting the source
        * memory data is eliminated when the distance between src and
        * dst is less than 16. The memory accesses here are alignment.
        */
        tbz     tmp2, #0, 1f
        ldrb1   tmp1w, src, #1
        strb1   tmp1w, dst, #1
1:
        tbz     tmp2, #1, 2f
        ldrh1   tmp1w, src, #2
        strh1   tmp1w, dst, #2
2:
        tbz     tmp2, #2, 3f
        ldr1    tmp1w, src, #4
        str1    tmp1w, dst, #4
3:
        tbz     tmp2, #3, .LSrcAligned
        ldr1    tmp1, src, #8
        str1    tmp1, dst, #8

.LSrcAligned:
        cmp     count, #64
        b.ge    .Lcpy_over64
        /*
        * Deal with small copies quickly by dropping straight into the
        * exit block.
        */
.Ltail63:
        /*
        * Copy up to 48 bytes of data. At this point we only need the
        * bottom 6 bits of count to be accurate.
        */
        ands    tmp1, count, #0x30
        b.eq    .Ltiny15
        cmp     tmp1w, #0x20
        b.eq    1f
        b.lt    2f
        ldp1    A_l, A_h, src, #16
        stp1    A_l, A_h, dst, #16
1:
        ldp1    A_l, A_h, src, #16
        stp1    A_l, A_h, dst, #16
2:
        ldp1    A_l, A_h, src, #16
        stp1    A_l, A_h, dst, #16
```

```
.Ltiny15:
        /*
        * Prefer to break one ldp/stp into several load/store to access
        * memory in an increasing address order,rather than to load/store 16
        * bytes from (src-16) to (dst-16) and to backward the src to aligned
        * address,which way is used in original cortex memcpy. If keeping
        * the original memcpy process here, memmove need to satisfy the
        * precondition that src address is at least 16 bytes bigger than dst
        * address,otherwise some source data will be overwritten when memove
        * call memcpy directly. To make memmove simpler and decouple the
        * memcpy's dependency on memmove, withdrew the original process.
        */
        tbz     count, #3, 1f
        ldr1    tmp1, src, #8
        str1    tmp1, dst, #8
1:
        tbz     count, #2, 2f
        ldr1    tmp1w, src, #4
        str1    tmp1w, dst, #4
2:
        tbz     count, #1, 3f
        ldrh1   tmp1w, src, #2
        strh1   tmp1w, dst, #2
3:
        tbz     count, #0, .Lexitfunc
        ldrb1   tmp1w, src, #1
        strb1   tmp1w, dst, #1

        b       .Lexitfunc

.Lcpy_over64:
        subs    count, count, #128
        b.ge    .Lcpy_body_large
        /*
        * Less than 128 bytes to copy, so handle 64 here and then jump
        * to the tail.
        */
        ldp1    A_l, A_h, src, #16
        stp1    A_l, A_h, dst, #16
        ldp1    B_l, B_h, src, #16
        ldp1    C_l, C_h, src, #16
        stp1    B_l, B_h, dst, #16
        stp1    C_l, C_h, dst, #16
        ldp1    D_l, D_h, src, #16
        stp1    D_l, D_h, dst, #16

        tst     count, #0x3f
        b.ne    .Ltail63
        b       .Lexitfunc

        /*
        * Critical loop.  Start at a new cache line boundary.  Assuming
        * 64 bytes per line this ensures the entire loop is in one line.
        */
        .p2align        L1_CACHE_SHIFT
.Lcpy_body_large:
        /* pre-get 64 bytes data. */
        ldp1    A_l, A_h, src, #16
        ldp1    B_l, B_h, src, #16
```

```
        ldp1    C_l, C_h, src, #16
        ldp1    D_l, D_h, src, #16
1:
        /*
        * interlace the load of next 64 bytes data block with store of the last
        * loaded 64 bytes data.
        */
        stp1    A_l, A_h, dst, #16
        ldp1    A_l, A_h, src, #16
        stp1    B_l, B_h, dst, #16
        ldp1    B_l, B_h, src, #16
        stp1    C_l, C_h, dst, #16
        ldp1    C_l, C_h, src, #16
        stp1    D_l, D_h, dst, #16
        ldp1    D_l, D_h, src, #16
        subs    count, count, #64
        b.ge    1b
        stp1    A_l, A_h, dst, #16
        stp1    B_l, B_h, dst, #16
        stp1    C_l, C_h, dst, #16
        stp1    D_l, D_h, dst, #16

        tst     count, #0x3f
        b.ne    .Ltail63
.Lexitfunc:
----------------------------------------------------------------------
linux/arch/arm64/lib/copy_in_user.S
----------------------------------------------------------------------
/*
 * Copy from user space to user space
 *
 * Copyright (C) 2012 ARM Ltd.
 *
 * This program is free software; you can redistribute it and/or modify
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */

#include <linux/linkage.h>

#include <asm/cache.h>
#include <asm/asm-uaccess.h>

/*
 * Copy from user space to user space (alignment handled by the hardware)
 *
 * Parameters:
 *      x0 - to
 *      x1 - from
 *      x2 - n
 * Returns:
```

```
 *      x0 - bytes not copied
 */
        .macro ldrb1 ptr, regB, val
        uao_user_alternative 9998f, ldrb, ldtrb, \ptr, \regB, \val
        .endm

        .macro strb1 ptr, regB, val
        uao_user_alternative 9998f, strb, sttrb, \ptr, \regB, \val
        .endm

        .macro ldrh1 ptr, regB, val
        uao_user_alternative 9998f, ldrh, ldtrh, \ptr, \regB, \val
        .endm

        .macro strh1 ptr, regB, val
        uao_user_alternative 9998f, strh, sttrh, \ptr, \regB, \val
        .endm

        .macro ldr1 ptr, regB, val
        uao_user_alternative 9998f, ldr, ldtr, \ptr, \regB, \val
        .endm

        .macro str1 ptr, regB, val
        uao_user_alternative 9998f, str, sttr, \ptr, \regB, \val
        .endm

        .macro ldp1 ptr, regB, regC, val
        uao_ldp 9998f, \ptr, \regB, \regC, \val
        .endm

        .macro stp1 ptr, regB, regC, val
        uao_stp 9998f, \ptr, \regB, \regC, \val
        .endm

end     .req    x5
ENTRY(raw_copy_in_user)
        uaccess_enable_not_uao x3, x4
        add     end, x0, x2
#include "copy_template.S"
        uaccess_disable_not_uao x3
        mov     x0, #0
        ret
ENDPROC(raw_copy_in_user)

        .section .fixup,"ax"
        .align  2
9998:   sub     x0, end, dst                    // bytes not copied
        ret
        .previous
--------------------------------------------------------------------
linux/arch/arm64/mm/copypage.c
--------------------------------------------------------------------
/*
 * Based on arch/arm/mm/copypage.c
 *
 * Copyright (C) 2002 Deep Blue Solutions Ltd, All Rights Reserved.
 * Copyright (C) 2012 ARM Ltd.
 *
 * This program is free software; you can redistribute it and/or modify
```

```
 * it under the terms of the GNU General Public License version 2 as
 * published by the Free Software Foundation.
 *
 * This program is distributed in the hope that it will be useful,
 * but WITHOUT ANY WARRANTY; without even the implied warranty of
 * MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
 * GNU General Public License for more details.
 *
 * You should have received a copy of the GNU General Public License
 * along with this program.  If not, see <http://www.gnu.org/licenses/>.
 */

#include <linux/mm.h>

#include <asm/page.h>
#include <asm/cacheflush.h>

void __cpu_copy_user_page(void *kto, const void *kfrom, unsigned long vaddr)
{
        struct page *page = virt_to_page(kto);
        copy_page(kto, kfrom);
        flush_dcache_page(page);
}
EXPORT_SYMBOL_GPL(__cpu_copy_user_page);

void __cpu_clear_user_page(void *kaddr, unsigned long vaddr)
{
        clear_page(kaddr);
}
EXPORT_SYMBOL_GPL(__cpu_clear_user_page);
----------------------------------------------------------------------
linux/fs/jffs2/LICENCE
----------------------------------------------------------------------
The files in this directory and elsewhere which refer to this LICENCE
file are part of JFFS2, the Journalling Flash File System v2.

        Copyright © 2001-2007 Red Hat, Inc. and others

JFFS2 is free software; you can redistribute it and/or modify it under
the terms of the GNU General Public License as published by the Free
Software Foundation; either version 2 or (at your option) any later
version.

JFFS2 is distributed in the hope that it will be useful, but WITHOUT
ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or
FITNESS FOR A PARTICULAR PURPOSE.  See the GNU General Public License
for more details.

You should have received a copy of the GNU General Public License along
with JFFS2; if not, write to the Free Software Foundation, Inc.,
59 Temple Place, Suite 330, Boston, MA 02111-1307 USA.

As a special exception, if other files instantiate templates or use
macros or inline functions from these files, or you compile these
files and link them with other works to produce a work based on these
files, these files do not by themselves cause the resulting work to be
covered by the GNU General Public License. However the source code for
these files must still be made available in accordance with section (3)
of the GNU General Public License.
```

```
This exception does not invalidate any other reasons why a work based on
this file might be covered by the GNU General Public License.

----------------------------------------------------------------------
linux/fs/overlayfs/copy_up.c
----------------------------------------------------------------------
/*
 *
 * Copyright (C) 2011 Novell Inc.
 *
 * This program is free software; you can redistribute it and/or modify it
 * under the terms of the GNU General Public License version 2 as published by
 * the Free Software Foundation.
 */

#include <linux/module.h>
#include <linux/fs.h>
#include <linux/slab.h>
#include <linux/file.h>
#include <linux/splice.h>
#include <linux/xattr.h>
#include <linux/security.h>
#include <linux/uaccess.h>
#include <linux/sched/signal.h>
#include <linux/cred.h>
#include <linux/namei.h>
#include <linux/fdtable.h>
#include <linux/ratelimit.h>
#include <linux/exportfs.h>
#include "overlayfs.h"

#define OVL_COPY_UP_CHUNK_SIZE (1 << 20)

static bool __read_mostly ovl_check_copy_up;
module_param_named(check_copy_up, ovl_check_copy_up, bool,
                   S_IWUSR | S_IRUGO);
MODULE_PARM_DESC(ovl_check_copy_up,
                 "Warn on copy-up when causing process also has a R/O fd open");

static int ovl_check_fd(const void *data, struct file *f, unsigned int fd)
{
        const struct dentry *dentry = data;

        if (file_inode(f) == d_inode(dentry))
                pr_warn_ratelimited("overlayfs: Warning: Copying up %pD, but open R/O on fd %u which will cease
                                    f, fd, current->pid, current->comm);
        return 0;
}

/*
 * Check the fds open by this process and warn if something like the following
 * scenario is about to occur:
 *
 *      fd1 = open("foo", O_RDONLY);
 *      fd2 = open("foo", O_RDWR);
 */
static void ovl_do_check_copy_up(struct dentry *dentry)
{
```

```
        if (ovl_check_copy_up)
                iterate_fd(current->files, 0, ovl_check_fd, dentry);
}

int ovl_copy_xattr(struct dentry *old, struct dentry *new)
{
        ssize_t list_size, size, value_size = 0;
        char *buf, *name, *value = NULL;
        int uninitialized_var(error);
        size_t slen;

        if (!(old->d_inode->i_opflags & IOP_XATTR) ||
            !(new->d_inode->i_opflags & IOP_XATTR))
                return 0;

        list_size = vfs_listxattr(old, NULL, 0);
        if (list_size <= 0) {
                if (list_size == -EOPNOTSUPP)
                        return 0;
                return list_size;
        }

        buf = kzalloc(list_size, GFP_KERNEL);
        if (!buf)
                return -ENOMEM;

        list_size = vfs_listxattr(old, buf, list_size);
        if (list_size <= 0) {
                error = list_size;
                goto out;
        }

        for (name = buf; list_size; name += slen) {
                slen = strnlen(name, list_size) + 1;

                /* underlying fs providing us with an broken xattr list? */
                if (WARN_ON(slen > list_size)) {
                        error = -EIO;
                        break;
                }
                list_size -= slen;

                if (ovl_is_private_xattr(name))
                        continue;
retry:
                size = vfs_getxattr(old, name, value, value_size);
                if (size == -ERANGE)
                        size = vfs_getxattr(old, name, NULL, 0);

                if (size < 0) {
                        error = size;
                        break;
                }

                if (size > value_size) {
                        void *new;

                        new = krealloc(value, size, GFP_KERNEL);
                        if (!new) {
```

```
                                error = -ENOMEM;
                                break;
                        }
                        value = new;
                        value_size = size;
                        goto retry;
                }

                error = security_inode_copy_up_xattr(name);
                if (error < 0 && error != -EOPNOTSUPP)
                        break;
                if (error == 1) {
                        error = 0;
                        continue; /* Discard */
                }
                error = vfs_setxattr(new, name, value, size, 0);
                if (error)
                        break;
        }
        kfree(value);
out:
        kfree(buf);
        return error;
}

static int ovl_copy_up_data(struct path *old, struct path *new, loff_t len)
{
        struct file *old_file;
        struct file *new_file;
        loff_t old_pos = 0;
        loff_t new_pos = 0;
        int error = 0;

        if (len == 0)
                return 0;

        old_file = ovl_path_open(old, O_LARGEFILE | O_RDONLY);
        if (IS_ERR(old_file))
                return PTR_ERR(old_file);

        new_file = ovl_path_open(new, O_LARGEFILE | O_WRONLY);
        if (IS_ERR(new_file)) {
                error = PTR_ERR(new_file);
                goto out_fput;
        }

        /* Try to use clone_file_range to clone up within the same fs */
        error = vfs_clone_file_range(old_file, 0, new_file, 0, len);
        if (!error)
                goto out;
        /* Couldn't clone, so now we try to copy the data */
        error = 0;

        /* FIXME: copy up sparse files efficiently */
        while (len) {
                size_t this_len = OVL_COPY_UP_CHUNK_SIZE;
                long bytes;

                if (len < this_len)
```

```
                        this_len = len;

                if (signal_pending_state(TASK_KILLABLE, current)) {
                        error = -EINTR;
                        break;
                }

                bytes = do_splice_direct(old_file, &old_pos,
                                         new_file, &new_pos,
                                         this_len, SPLICE_F_MOVE);
                if (bytes <= 0) {
                        error = bytes;
                        break;
                }
                WARN_ON(old_pos != new_pos);

                len -= bytes;
        }
out:
        if (!error)
                error = vfs_fsync(new_file, 0);
        fput(new_file);
out_fput:
        fput(old_file);
        return error;
}

static int ovl_set_timestamps(struct dentry *upperdentry, struct kstat *stat)
{
        struct iattr attr = {
                .ia_valid =
                     ATTR_ATIME | ATTR_MTIME | ATTR_ATIME_SET | ATTR_MTIME_SET,
                .ia_atime = stat->atime,
                .ia_mtime = stat->mtime,
        };

        return notify_change(upperdentry, &attr, NULL);
}

int ovl_set_attr(struct dentry *upperdentry, struct kstat *stat)
{
        int err = 0;

        if (!S_ISLNK(stat->mode)) {
                struct iattr attr = {
                        .ia_valid = ATTR_MODE,
                        .ia_mode = stat->mode,
                };
                err = notify_change(upperdentry, &attr, NULL);
        }
        if (!err) {
                struct iattr attr = {
                        .ia_valid = ATTR_UID | ATTR_GID,
                        .ia_uid = stat->uid,
                        .ia_gid = stat->gid,
                };
                err = notify_change(upperdentry, &attr, NULL);
        }
        if (!err)
```

```
                ovl_set_timestamps(upperdentry, stat);

        return err;
}

struct ovl_fh *ovl_encode_fh(struct dentry *lower, bool is_upper)
{
        struct ovl_fh *fh;
        int fh_type, fh_len, dwords;
        void *buf;
        int buflen = MAX_HANDLE_SZ;
        uuid_t *uuid = &lower->d_sb->s_uuid;

        buf = kmalloc(buflen, GFP_KERNEL);
        if (!buf)
                return ERR_PTR(-ENOMEM);

        /*
         * We encode a non-connectable file handle for non-dir, because we
         * only need to find the lower inode number and we don't want to pay
         * the price or reconnecting the dentry.
         */
        dwords = buflen >> 2;
        fh_type = exportfs_encode_fh(lower, buf, &dwords, 0);
        buflen = (dwords << 2);

        fh = ERR_PTR(-EIO);
        if (WARN_ON(fh_type < 0) ||
            WARN_ON(buflen > MAX_HANDLE_SZ) ||
            WARN_ON(fh_type == FILEID_INVALID))
                goto out;

        BUILD_BUG_ON(MAX_HANDLE_SZ + offsetof(struct ovl_fh, fid) > 255);
        fh_len = offsetof(struct ovl_fh, fid) + buflen;
        fh = kmalloc(fh_len, GFP_KERNEL);
        if (!fh) {
                fh = ERR_PTR(-ENOMEM);
                goto out;
        }

        fh->version = OVL_FH_VERSION;
        fh->magic = OVL_FH_MAGIC;
        fh->type = fh_type;
        fh->flags = OVL_FH_FLAG_CPU_ENDIAN;
        /*
         * When we will want to decode an overlay dentry from this handle
         * and all layers are on the same fs, if we get a disconncted real
         * dentry when we decode fid, the only way to tell if we should assign
         * it to upperdentry or to lowerstack is by checking this flag.
         */
        if (is_upper)
                fh->flags |= OVL_FH_FLAG_PATH_UPPER;
        fh->len = fh_len;
        fh->uuid = *uuid;
        memcpy(fh->fid, buf, buflen);

out:
        kfree(buf);
        return fh;
```

```
}

static int ovl_set_origin(struct dentry *dentry, struct dentry *lower,
                          struct dentry *upper)
{
        const struct ovl_fh *fh = NULL;
        int err;

        /*
         * When lower layer doesn't support export operations store a 'null' fh,
         * so we can use the overlay.origin xattr to distignuish between a copy
         * up and a pure upper inode.
         */
        if (ovl_can_decode_fh(lower->d_sb)) {
                fh = ovl_encode_fh(lower, false);
                if (IS_ERR(fh))
                        return PTR_ERR(fh);
        }

        /*
         * Do not fail when upper doesn't support xattrs.
         */
        err = ovl_check_setxattr(dentry, upper, OVL_XATTR_ORIGIN, fh,
                                 fh ? fh->len : 0, 0);
        kfree(fh);

        return err;
}

struct ovl_copy_up_ctx {
        struct dentry *parent;
        struct dentry *dentry;
        struct path lowerpath;
        struct kstat stat;
        struct kstat pstat;
        const char *link;
        struct dentry *destdir;
        struct qstr destname;
        struct dentry *workdir;
        bool tmpfile;
        bool origin;
};

static int ovl_link_up(struct ovl_copy_up_ctx *c)
{
        int err;
        struct dentry *upper;
        struct dentry *upperdir = ovl_dentry_upper(c->parent);
        struct inode *udir = d_inode(upperdir);

        /* Mark parent "impure" because it may now contain non-pure upper */
        err = ovl_set_impure(c->parent, upperdir);
        if (err)
                return err;

        err = ovl_set_nlink_lower(c->dentry);
        if (err)
                return err;
```

```
        inode_lock_nested(udir, I_MUTEX_PARENT);
        upper = lookup_one_len(c->dentry->d_name.name, upperdir,
                               c->dentry->d_name.len);
        err = PTR_ERR(upper);
        if (!IS_ERR(upper)) {
                err = ovl_do_link(ovl_dentry_upper(c->dentry), udir, upper,
                                  true);
                dput(upper);

                if (!err) {
                        /* Restore timestamps on parent (best effort) */
                        ovl_set_timestamps(upperdir, &c->pstat);
                        ovl_dentry_set_upper_alias(c->dentry);
                }
        }
        inode_unlock(udir);
        ovl_set_nlink_upper(c->dentry);

        return err;
}

static int ovl_install_temp(struct ovl_copy_up_ctx *c, struct dentry *temp,
                            struct dentry **newdentry)
{
        int err;
        struct dentry *upper;
        struct inode *udir = d_inode(c->destdir);

        upper = lookup_one_len(c->destname.name, c->destdir, c->destname.len);
        if (IS_ERR(upper))
                return PTR_ERR(upper);

        if (c->tmpfile)
                err = ovl_do_link(temp, udir, upper, true);
        else
                err = ovl_do_rename(d_inode(c->workdir), temp, udir, upper, 0);

        if (!err)
                *newdentry = dget(c->tmpfile ? upper : temp);
        dput(upper);

        return err;
}

static int ovl_get_tmpfile(struct ovl_copy_up_ctx *c, struct dentry **tempp)
{
        int err;
        struct dentry *temp;
        const struct cred *old_creds = NULL;
        struct cred *new_creds = NULL;
        struct cattr cattr = {
                /* Can't properly set mode on creation because of the umask */
                .mode = c->stat.mode & S_IFMT,
                .rdev = c->stat.rdev,
                .link = c->link
        };

        err = security_inode_copy_up(c->dentry, &new_creds);
        if (err < 0)
```

```
                goto out;

        if (new_creds)
                old_creds = override_creds(new_creds);

        if (c->tmpfile) {
                temp = ovl_do_tmpfile(c->workdir, c->stat.mode);
                if (IS_ERR(temp))
                        goto temp_err;
        } else {
                temp = ovl_lookup_temp(c->workdir);
                if (IS_ERR(temp))
                        goto temp_err;

                err = ovl_create_real(d_inode(c->workdir), temp, &cattr,
                                      NULL, true);
                if (err) {
                        dput(temp);
                        goto out;
                }
        }
        err = 0;
        *tempp = temp;
out:
        if (new_creds) {
                revert_creds(old_creds);
                put_cred(new_creds);
        }

        return err;

temp_err:
        err = PTR_ERR(temp);
        goto out;
}

static int ovl_copy_up_inode(struct ovl_copy_up_ctx *c, struct dentry *temp)
{
        int err;

        if (S_ISREG(c->stat.mode)) {
                struct path upperpath;

                ovl_path_upper(c->dentry, &upperpath);
                BUG_ON(upperpath.dentry != NULL);
                upperpath.dentry = temp;

                err = ovl_copy_up_data(&c->lowerpath, &upperpath, c->stat.size);
                if (err)
                        return err;
        }

        err = ovl_copy_xattr(c->lowerpath.dentry, temp);
        if (err)
                return err;

        inode_lock(temp->d_inode);
        err = ovl_set_attr(temp, &c->stat);
        inode_unlock(temp->d_inode);
```

```
        if (err)
                return err;

        /*
         * Store identifier of lower inode in upper inode xattr to
         * allow lookup of the copy up origin inode.
         *
         * Don't set origin when we are breaking the association with a lower
         * hard link.
         */
        if (c->origin) {
                err = ovl_set_origin(c->dentry, c->lowerpath.dentry, temp);
                if (err)
                        return err;
        }

        return 0;
}

static int ovl_copy_up_locked(struct ovl_copy_up_ctx *c)
{
        struct inode *udir = c->destdir->d_inode;
        struct inode *inode;
        struct dentry *newdentry = NULL;
        struct dentry *temp = NULL;
        int err;

        err = ovl_get_tmpfile(c, &temp);
        if (err)
                goto out;

        err = ovl_copy_up_inode(c, temp);
        if (err)
                goto out_cleanup;

        if (c->tmpfile) {
                inode_lock_nested(udir, I_MUTEX_PARENT);
                err = ovl_install_temp(c, temp, &newdentry);
                inode_unlock(udir);
        } else {
                err = ovl_install_temp(c, temp, &newdentry);
        }
        if (err)
                goto out_cleanup;

        inode = d_inode(c->dentry);
        ovl_inode_update(inode, newdentry);
        if (S_ISDIR(inode->i_mode))
                ovl_set_flag(OVL_WHITEOUTS, inode);

out:
        dput(temp);
        return err;

out_cleanup:
        if (!c->tmpfile)
                ovl_cleanup(d_inode(c->workdir), temp);
        goto out;
}
```

```
/*
 * Copy up a single dentry
 *
 * All renames start with copy up of source if necessary.  The actual
 * rename will only proceed once the copy up was successful.  Copy up uses
 * upper parent i_mutex for exclusion.  Since rename can change d_parent it
 * is possible that the copy up will lock the old parent.  At that point
 * the file will have already been copied up anyway.
 */
static int ovl_do_copy_up(struct ovl_copy_up_ctx *c)
{
        int err;
        struct ovl_fs *ofs = c->dentry->d_sb->s_fs_info;
        bool indexed = false;

        if (ovl_indexdir(c->dentry->d_sb) && !S_ISDIR(c->stat.mode) &&
            c->stat.nlink > 1)
                indexed = true;

        if (S_ISDIR(c->stat.mode) || c->stat.nlink == 1 || indexed)
                c->origin = true;

        if (indexed) {
                c->destdir = ovl_indexdir(c->dentry->d_sb);
                err = ovl_get_index_name(c->lowerpath.dentry, &c->destname);
                if (err)
                        return err;
        } else {
                /*
                 * Mark parent "impure" because it may now contain non-pure
                 * upper
                 */
                err = ovl_set_impure(c->parent, c->destdir);
                if (err)
                        return err;
        }

        /* Should we copyup with O_TMPFILE or with workdir? */
        if (S_ISREG(c->stat.mode) && ofs->tmpfile) {
                c->tmpfile = true;
                err = ovl_copy_up_locked(c);
        } else {
                err = ovl_lock_rename_workdir(c->workdir, c->destdir);
                if (!err) {
                        err = ovl_copy_up_locked(c);
                        unlock_rename(c->workdir, c->destdir);
                }
        }

        if (indexed) {
                if (!err)
                        ovl_set_flag(OVL_INDEX, d_inode(c->dentry));
                kfree(c->destname.name);
        } else if (!err) {
                struct inode *udir = d_inode(c->destdir);

                /* Restore timestamps on parent (best effort) */
                inode_lock(udir);
```

```
                ovl_set_timestamps(c->destdir, &c->pstat);
                inode_unlock(udir);

                ovl_dentry_set_upper_alias(c->dentry);
        }

        return err;
}

static int ovl_copy_up_one(struct dentry *parent, struct dentry *dentry,
                           int flags)
{
        int err;
        DEFINE_DELAYED_CALL(done);
        struct path parentpath;
        struct ovl_copy_up_ctx ctx = {
                .parent = parent,
                .dentry = dentry,
                .workdir = ovl_workdir(dentry),
        };

        if (WARN_ON(!ctx.workdir))
                return -EROFS;

        ovl_path_lower(dentry, &ctx.lowerpath);
        err = vfs_getattr(&ctx.lowerpath, &ctx.stat,
                          STATX_BASIC_STATS, AT_STATX_SYNC_AS_STAT);
        if (err)
                return err;

        ovl_path_upper(parent, &parentpath);
        ctx.destdir = parentpath.dentry;
        ctx.destname = dentry->d_name;

        err = vfs_getattr(&parentpath, &ctx.pstat,
                          STATX_ATIME | STATX_MTIME, AT_STATX_SYNC_AS_STAT);
        if (err)
                return err;

        /* maybe truncate regular file. this has no effect on dirs */
        if (flags & O_TRUNC)
                ctx.stat.size = 0;

        if (S_ISLNK(ctx.stat.mode)) {
                ctx.link = vfs_get_link(ctx.lowerpath.dentry, &done);
                if (IS_ERR(ctx.link))
                        return PTR_ERR(ctx.link);
        }
        ovl_do_check_copy_up(ctx.lowerpath.dentry);

        err = ovl_copy_up_start(dentry);
        /* err < 0: interrupted, err > 0: raced with another copy-up */
        if (unlikely(err)) {
                if (err > 0)
                        err = 0;
        } else {
                if (!ovl_dentry_upper(dentry))
                        err = ovl_do_copy_up(&ctx);
                if (!err && !ovl_dentry_has_upper_alias(dentry))
```

```
                        err = ovl_link_up(&ctx);
                ovl_copy_up_end(dentry);
        }
        do_delayed_call(&done);

        return err;
}

int ovl_copy_up_flags(struct dentry *dentry, int flags)
{
        int err = 0;
        const struct cred *old_cred = ovl_override_creds(dentry->d_sb);

        while (!err) {
                struct dentry *next;
                struct dentry *parent;

                /*
                 * Check if copy-up has happened as well as for upper alias (in
                 * case of hard links) is there.
                 *
                 * Both checks are lockless:
                 *  - false negatives: will recheck under oi->lock
                 *  - false positives:
                 *    + ovl_dentry_upper() uses memory barriers to ensure the
                 *      upper dentry is up-to-date
                 *    + ovl_dentry_has_upper_alias() relies on locking of
                 *      upper parent i_rwsem to prevent reordering copy-up
                 *      with rename.
                 */
                if (ovl_dentry_upper(dentry) &&
                    ovl_dentry_has_upper_alias(dentry))
                        break;

                next = dget(dentry);
                /* find the topmost dentry not yet copied up */
                for (;;) {
                        parent = dget_parent(next);

                        if (ovl_dentry_upper(parent))
                                break;

                        dput(next);
                        next = parent;
                }

                err = ovl_copy_up_one(parent, next, flags);

                dput(parent);
                dput(next);
        }
        revert_creds(old_cred);

        return err;
}

int ovl_copy_up(struct dentry *dentry)
{
        return ovl_copy_up_flags(dentry, 0);
```

```
}
---------------------------------------------------------------------
linux/tools/testing/selftests/powerpc/alignment/copy_paste_unaligned_common.h
---------------------------------------------------------------------
/*
 * Copyright 2016, Chris Smart, IBM Corporation.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 *
 * Declarations for common code for copy, copy_first, paste and
 * paste_last unaligned tests.
 *
 */

#ifndef _SELFTESTS_POWERPC_COPY_PASTE_H
#define _SELFTESTS_POWERPC_COPY_PASTE_H

#include <signal.h>

int main(int argc, char *argv[]);
void signal_action_handler(int signal_num, siginfo_t *info, void *ptr);
void setup_signal_handler(void);
extern char cacheline_buf[128] __cacheline_aligned;
extern unsigned int expected_instruction;
extern unsigned int instruction_mask;

#endif /* _SELFTESTS_POWERPC_COPY_PASTE_H */
---------------------------------------------------------------------
linux/tools/testing/selftests/powerpc/alignment/copy_unaligned.c
---------------------------------------------------------------------
/*
 * Copyright 2016, Chris Smart, IBM Corporation.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 *
 * Calls to copy which are not 128-byte aligned should be caught
 * and sent a SIGBUS.
 *
 */

#include <string.h>
#include <unistd.h>
#include "utils.h"
#include "instructions.h"
#include "copy_paste_unaligned_common.h"

unsigned int expected_instruction = PPC_INST_COPY;
unsigned int instruction_mask = 0xfc0007fe;

int test_copy_unaligned(void)
{
        /* Only run this test on a P9 or later */
        SKIP_IF(!have_hwcap2(PPC_FEATURE2_ARCH_3_00));
```

```
        /* Register our signal handler with SIGBUS */
        setup_signal_handler();

        /* +1 makes buf unaligned */
        copy(cacheline_buf+1);

        /* We should not get here */
        return 1;
}

int main(int argc, char *argv[])
{
        return test_harness(test_copy_unaligned, "test_copy_unaligned");
}
----------------------------------------------------------------------
linux/tools/testing/selftests/powerpc/alignment/copy_paste_unaligned_common.c
----------------------------------------------------------------------
/*
 * Copyright 2016, Chris Smart, IBM Corporation.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 *
 * Common code for copy, copy_first, paste and paste_last unaligned
 * tests.
 *
 */

#include <signal.h>
#include <string.h>
#include <unistd.h>
#include "utils.h"
#include "instructions.h"
#include "copy_paste_unaligned_common.h"

unsigned int expected_instruction;
unsigned int instruction_mask;

char cacheline_buf[128] __cacheline_aligned;

void signal_action_handler(int signal_num, siginfo_t *info, void *ptr)
{
        ucontext_t *ctx = ptr;
#if defined(__powerpc64__)
        unsigned int *pc = (unsigned int *)ctx->uc_mcontext.gp_regs[PT_NIP];
#else
        unsigned int *pc = (unsigned int *)ctx->uc_mcontext.uc_regs->gregs[PT_NIP];
#endif

        /*
         * Check that the signal was on the correct instruction, using a
         * mask because the compiler assigns the register at RB.
         */
        if ((*pc & instruction_mask) == expected_instruction)
                _exit(0); /* We hit the right instruction */
```

```
        _exit(1);
}

void setup_signal_handler(void)
{
        struct sigaction signal_action;

        memset(&signal_action, 0, sizeof(signal_action));
        signal_action.sa_sigaction = signal_action_handler;
        signal_action.sa_flags = SA_SIGINFO;
        sigaction(SIGBUS, &signal_action, NULL);
}
----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/alignment/copy_first_unaligned.c
----------------------------------------------------------------
/*
 * Copyright 2016, Chris Smart, IBM Corporation.
 *
 * This program is free software; you can redistribute it and/or
 * modify it under the terms of the GNU General Public License
 * as published by the Free Software Foundation; either version
 * 2 of the License, or (at your option) any later version.
 *
 * Calls to copy_first which are not 128-byte aligned should be
 * caught and sent a SIGBUS.
 *
 */

#include <string.h>
#include <unistd.h>
#include "utils.h"
#include "instructions.h"
#include "copy_paste_unaligned_common.h"

unsigned int expected_instruction = PPC_INST_COPY_FIRST;
unsigned int instruction_mask = 0xfc2007fe;

int test_copy_first_unaligned(void)
{
        /* Only run this test on a P9 or later */
        SKIP_IF(!have_hwcap2(PPC_FEATURE2_ARCH_3_00));

        /* Register our signal handler with SIGBUS */
        setup_signal_handler();

        /* +1 makes buf unaligned */
        copy_first(cacheline_buf+1);

        /* We should not get here */
        return 1;
}

int main(int argc, char *argv[])
{
        return test_harness(test_copy_first_unaligned, "test_copy_first_unaligned");
}
----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/
----------------------------------------------------------------
```

```
----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/Makefile
----------------------------------------------------------------
# SPDX-License-Identifier: GPL-2.0
# The loops are all 64-bit code
CFLAGS += -m64
CFLAGS += -I$(CURDIR)
CFLAGS += -D SELFTEST
CFLAGS += -maltivec

# Use our CFLAGS for the implicit .S rule
ASFLAGS = $(CFLAGS)

TEST_GEN_PROGS := copyuser_64 copyuser_power7 memcpy_64 memcpy_power7
EXTRA_SOURCES := validate.c ../harness.c

include ../../lib.mk

$(OUTPUT)/copyuser_64:     CPPFLAGS += -D COPY_LOOP=test___copy_tofrom_user_base
$(OUTPUT)/copyuser_power7: CPPFLAGS += -D COPY_LOOP=test___copy_tofrom_user_power7
$(OUTPUT)/memcpy_64:       CPPFLAGS += -D COPY_LOOP=test_memcpy
$(OUTPUT)/memcpy_power7:   CPPFLAGS += -D COPY_LOOP=test_memcpy_power7

$(TEST_GEN_PROGS): $(EXTRA_SOURCES)
----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/asm/
----------------------------------------------------------------
----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/asm/ppc_asm.h
----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
#include <ppc-asm.h>

#define CONFIG_ALTIVEC

#define r1      1

#define R14 r14
#define R15 r15
#define R16 r16
#define R17 r17
#define R18 r18
#define R19 r19
#define R20 r20
#define R21 r21
#define R22 r22
#define R29 r29
#define R30 r30
#define R31 r31

#define STACKFRAMESIZE  256
#define STK_REG(i)      (112 + ((i)-14)*8)

#define _GLOBAL(A) FUNC_START(test_ ## A)
#define _GLOBAL_TOC(A) _GLOBAL(A)

#define PPC_MTOCRF(A, B)        mtocrf A, B

#define EX_TABLE(x, y)
```

```
FUNC_START(enter_vmx_usercopy)
        li      r3,1
        blr

FUNC_START(exit_vmx_usercopy)
        li      r3,0
        blr

FUNC_START(enter_vmx_copy)
        li      r3,1
        blr

FUNC_START(exit_vmx_copy)
        blr

FUNC_START(memcpy_power7)
        blr

FUNC_START(__copy_tofrom_user_power7)
        blr

FUNC_START(__copy_tofrom_user_base)
        blr

#define BEGIN_FTR_SECTION
#define FTR_SECTION_ELSE
#define ALT_FTR_SECTION_END_IFCLR(x)
#define ALT_FTR_SECTION_END(x, y)
#define END_FTR_SECTION_IFCLR(x)
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/asm/export.h
-----------------------------------------------------------------
/* SPDX-License-Identifier: GPL-2.0 */
#define EXPORT_SYMBOL(x)
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/asm/processor.h
-----------------------------------------------------------------
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/validate.c
-----------------------------------------------------------------
// SPDX-License-Identifier: GPL-2.0
#include <malloc.h>
#include <string.h>
#include <stdlib.h>
#include <stdbool.h>

#include "utils.h"

#define MAX_LEN 8192
#define MAX_OFFSET 16
#define MIN_REDZONE 128
#define BUFLEN (MAX_LEN+MAX_OFFSET+2*MIN_REDZONE)
#define POISON 0xa5

unsigned long COPY_LOOP(void *to, const void *from, unsigned long size);

static void do_one(char *src, char *dst, unsigned long src_off,
                   unsigned long dst_off, unsigned long len, void *redzone,
```

```
                    void *fill)
{
        char *srcp, *dstp;
        unsigned long ret;
        unsigned long i;

        srcp = src + MIN_REDZONE + src_off;
        dstp = dst + MIN_REDZONE + dst_off;

        memset(src, POISON, BUFLEN);
        memset(dst, POISON, BUFLEN);
        memcpy(srcp, fill, len);

        ret = COPY_LOOP(dstp, srcp, len);
        if (ret && ret != (unsigned long)dstp) {
                printf("(%p,%p,%ld) returned %ld\n", dstp, srcp, len, ret);
                abort();
        }

        if (memcmp(dstp, srcp, len)) {
                printf("(%p,%p,%ld) miscompare\n", dstp, srcp, len);
                printf("src: ");
                for (i = 0; i < len; i++)
                        printf("%02x ", srcp[i]);
                printf("\ndst: ");
                for (i = 0; i < len; i++)
                        printf("%02x ", dstp[i]);
                printf("\n");
                abort();
        }

        if (memcmp(dst, redzone, dstp - dst)) {
                printf("(%p,%p,%ld) redzone before corrupted\n",
                       dstp, srcp, len);
                abort();
        }

        if (memcmp(dstp+len, redzone, dst+BUFLEN-(dstp+len))) {
                printf("(%p,%p,%ld) redzone after corrupted\n",
                       dstp, srcp, len);
                abort();
        }
}

int test_copy_loop(void)
{
        char *src, *dst, *redzone, *fill;
        unsigned long len, src_off, dst_off;
        unsigned long i;

        src = memalign(BUFLEN, BUFLEN);
        dst = memalign(BUFLEN, BUFLEN);
        redzone = malloc(BUFLEN);
        fill = malloc(BUFLEN);

        if (!src || !dst || !redzone || !fill) {
                fprintf(stderr, "malloc failed\n");
                exit(1);
        }
```

```
        memset(redzone, POISON, BUFLEN);

        /* Fill with sequential bytes */
        for (i = 0; i < BUFLEN; i++)
                fill[i] = i & 0xff;

        for (len = 1; len < MAX_LEN; len++) {
                for (src_off = 0; src_off < MAX_OFFSET; src_off++) {
                        for (dst_off = 0; dst_off < MAX_OFFSET; dst_off++) {
                                do_one(src, dst, src_off, dst_off, len,
                                       redzone, fill);
                        }
                }
        }

        return 0;
}

int main(void)
{
        return test_harness(test_copy_loop, str(COPY_LOOP));
}
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/memcpy_power7.S
-----------------------------------------------------------------
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/copyuser_64.S
-----------------------------------------------------------------
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/memcpy_64.S
-----------------------------------------------------------------
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/.gitignore
-----------------------------------------------------------------
copyuser_64
copyuser_power7
memcpy_64
memcpy_power7
-----------------------------------------------------------------
linux/tools/testing/selftests/powerpc/copyloops/copyuser_power7.S
-----------------------------------------------------------------
-----------------------------------------------------------------
linux/tools/usb/usbip/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
```

General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of

running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

```
  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
```

these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free

programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

3.60 logrotate

```
logrotate
---------------------------------------------------------------------
logrotate/COPYING
---------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                          675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

```
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)


These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
```

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19yy name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
```

3.61 m4

```
m4
------------------------------------------------------------------
m4/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
--------------------------------------------------------------------
m4/examples/COPYING
--------------------------------------------------------------------
The files in this directory provide example uses of GNU M4.
The following copyright notice applies to each of these
description files.

Copyright (C) 2006, 2010-2012 Free Software Foundation, Inc.
This file is free software; the Free Software Foundation
gives unlimited permission to copy and/or distribute it,
with or without modifications, as long as this notice is preserved.
```

3.62 make

```
make
------------------------------------------------------------------
make/glob/COPYING.LIB
------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
                    675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright
the library, and (2) offer you this license which gives you legal
permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain
that everyone understands that there is no warranty for this free
library.  If the library is modified by someone else and passed on, we
want its recipients to know that what they have is not the original
```

version, so that any problems introduced by others will not reflect on
the original authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that companies distributing free
software will individually obtain patent licenses, thus in effect
transforming the program into proprietary software. To prevent this,
we have made it clear that any patent must be licensed for everyone's
free use or not licensed at all.

  Most GNU software, including some libraries, is covered by the ordinary
GNU General Public License, which was designed for utility programs. This
license, the GNU Library General Public License, applies to certain
designated libraries. This license is quite different from the ordinary
one; be sure to read it in full, and don't assume that anything in it is
the same as in the ordinary license.

  The reason we have a separate public license for some libraries is that
they blur the distinction we usually make between modifying or adding to a
program and simply using it. Linking a program with a library, without
changing the library, is in some sense simply using the library, and is
analogous to running a utility program or application program. However, in
a textual and legal sense, the linked executable is a combined work, a
derivative of the original library, and the ordinary General Public License
treats it as such.

  Because of this blurred distinction, using the ordinary General
Public License for libraries did not effectively promote software
sharing, because most developers did not use the libraries. We
concluded that weaker conditions might promote sharing better.

  However, unrestricted linking of non-free programs would deprive the
users of those programs of all benefit from the free status of the
libraries themselves. This Library General Public License is intended to
permit developers of non-free programs to use free libraries, while
preserving your freedom as a user of such programs to change the free
libraries that are incorporated in them. (We have not seen how to achieve
this as regards changes in header files, but we have achieved it as regards
changes in the actual functions of the Library.) The hope is that this
will lead to faster development of free libraries.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, while the latter only
works together with the library.

  Note that it is possible for a library to be covered by the ordinary
General Public License rather than by this special one.

                GNU LIBRARY GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library which
contains a notice placed by the copyright holder or other authorized
party saying it may be distributed under the terms of this Library
General Public License (also called "this License"). Each licensee is

addressed as "you".

  A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

  Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

  You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or

table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not

compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application

to use the modified definitions.)

b) Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

d) Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities. This must be distributed under the terms of the
Sections above.

b) Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the

Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any
particular circumstance, the balance of the section is intended to apply,
and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Library General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and

"any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This library is free software; you can redistribute it and/or

```
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the Free
    Software Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
------------------------------------------------------------------
make/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
```

certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable. Therefore, we
have designed this version of the GPL to prohibit the practice for those
products. If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and
modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License. Each licensee is addressed as "you". "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy. The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based

on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding

Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

```
  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
```

Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the written offer to provide the Corresponding Source. This alternative is allowed only occasionally and noncommercially, and only if you received the object code with such an offer, in accord with subsection 6b.

d) Convey the object code by offering access from a designated place (gratis or for a charge), and offer equivalent access to the Corresponding Source in the same way through the same place at no further charge. You need not require recipients to copy the Corresponding Source along with the object code. If the place to copy the object code is a network server, the Corresponding Source may be on a different server (operated by you or a third party) that supports equivalent copying facilities, provided you maintain clear directions next to the object code saying where to find the Corresponding Source. Regardless of what server hosts the Corresponding Source, you remain obligated to ensure that it is available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install

modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for

    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License. Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License. If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program. Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance. However,
nothing other than this License grants you permission to propagate or
modify any covered work. These actions infringe copyright if you do
not accept this License. Therefore, by modifying or propagating a

covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means,

then you must either (1) cause the Corresponding Source to be so
available, or (2) arrange to deprive yourself of the benefit of the
patent license for this particular work, or (3) arrange, in a manner
consistent with the requirements of this License, to extend the patent
license to downstream recipients. "Knowingly relying" means you have
actual knowledge that, but for the patent license, your conveying the
covered work in a country, or your recipient's use of the covered work
in a country, would infringe one or more identifiable patents in that
country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or
arrangement, you convey, or propagate by procuring conveyance of, a
covered work, and grant a patent license to some of the parties
receiving the covered work authorizing them to use, propagate, modify
or convey a specific copy of the covered work, then the patent license
you grant is automatically extended to all recipients of the covered
work and works based on it.

  A patent license is "discriminatory" if it does not include within
the scope of its coverage, prohibits the exercise of, or is
conditioned on the non-exercise of one or more of the rights that are
specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.
```

Also add information on how to contact you by electronic and paper mail.

If the program does terminal interaction, make it output a short notice like this when it starts in an interactive mode:

```
    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, your program's commands might be different; for a GUI interface, you would use an "about box".

You should also get your employer (if you work as a programmer) or school, if any, to sign a "copyright disclaimer" for the program, if necessary. For more information on this, and how to apply and follow the GNU GPL, see <http://www.gnu.org/licenses/>.

The GNU General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License. But first, please read <http://www.gnu.org/philosophy/why-not-lgpl.html>.

---

make/tests/COPYING

GNU GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

```
 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
protecting users' freedom to change the software.  The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable.  Therefore, we
have designed this version of the GPL to prohibit the practice for those
products.  If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
```

States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

  A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that

is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an

```
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
```

tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own

removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License. Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your

license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The

work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement,

or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT

HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

```
  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.63 meinberg

```
meinberg
```

3.64 mpc

```
mpc
--------------------------------------------------------------------
mpc/COPYING.LESSER
--------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser
General Public License, and the "GNU GPL" refers to version 3 of the GNU
General Public License.

  "The Library" refers to a covered work governed by this License,
other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided
by the Library, but which is not otherwise based on the Library.
Defining a subclass of a class defined by the Library is deemed a mode
of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an
Application with the Library.  The particular version of the Library
with which the Combined Work was made is also called the "Linked
Version".

  The "Minimal Corresponding Source" for a Combined Work means the
Corresponding Source for the Combined Work, excluding any source code
for portions of the Combined Work that, considered in isolation, are
based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the
object code and/or source code for the Application, including any data
and utility programs needed for reproducing the Combined Work from the
Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License
without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a
facility refers to a function or data to be supplied by an Application
that uses the facility (other than as an argument passed when the
```

```
facility is invoked), then you may convey a copy of the modified
version:

   a) under this License, provided that you make a good faith effort to
   ensure that, in the event an Application does not supply the
   function or data, the facility still operates, and performs
   whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of
   this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from
a header file that is part of the Library.  You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library.  A suitable mechanism is one that (a) uses at run time
```

```
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
   GNU GPL, and only to the extent that such information is
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
   the Minimal Corresponding Source and Corresponding Application
   Code. If you use option 4d1, you must provide the Installation
   Information in the manner specified by section 6 of the GNU GPL
   for conveying Corresponding Source.)

  5. Combined Libraries.

  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

   a) Accompany the combined library with a copy of the same work based
   on the Library, uncombined with any other library facilities,
   conveyed under the terms of this License.

   b) Give prominent notice with the combined library that part of it
   is a work based on the Library, and explaining where to find the
   accompanying uncombined form of the same work.

  6. Revised Versions of the GNU Lesser General Public License.

  The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----------------------------------------------------------------------
mpc/tests/copy_parameter.c
----------------------------------------------------------------------
/* copy_parameter.c -- Copy of an input parameter into a parameter reused for
```

```
   output.

Copyright (C) 2012, 2013, 2014 INRIA

This file is part of GNU MPC.

GNU MPC is free software; you can redistribute it and/or modify it under
the terms of the GNU Lesser General Public License as published by the
Free Software Foundation; either version 3 of the License, or (at your
option) any later version.

GNU MPC is distributed in the hope that it will be useful, but WITHOUT ANY
WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS
FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for
more details.

You should have received a copy of the GNU Lesser General Public License
along with this program. If not, see http://www.gnu.org/licenses/ .
*/

#include "mpc-tests.h"

int
copy_parameter (mpc_fun_param_t *params, int index_dest, int index_src)
{
  mpfr_prec_t pre1, pim1;
  mpfr_prec_t pre2, pim2;
  int index_ref;

  if (params->T[index_src] != params->T[index_dest])
    {
      fprintf (stderr, "copy_parameter: types of parameters don't match.\n");
      exit (1);
    }

  switch (params->T[index_src])
    {
    case NATIVE_INT:
      tpl_copy_int (&params->P[index_dest].i, &params->P[index_src].i);
      return 0;
    case NATIVE_UL:
      tpl_copy_ui (&params->P[index_dest].ui, &params->P[index_src].ui);
      return 0;
    case NATIVE_L:
      tpl_copy_si (&params->P[index_dest].si, &params->P[index_src].si);
      return 0;
    case NATIVE_D:
      tpl_copy_d (&params->P[index_dest].d, &params->P[index_src].d);
      return 0;

    case NATIVE_LD:
      /* TODO */
      fprintf (stderr, "copy_parameter: type not implemented.\n");
      exit (1);
      break;

    case NATIVE_DC:
    case NATIVE_LDC:
#ifdef _Complex_I
```

```
      /* TODO */
      fprintf (stderr, "copy_parameter: type not implemented.\n");
      exit (1);
#endif
      break;

    case NATIVE_IM:
    case NATIVE_UIM:
#ifdef _MPC_H_HAVE_INTMAX_T
      /* TODO */
      fprintf (stderr, "copy_parameter: type not implemented.\n");
      exit (1);
#endif
      break;

    case GMP_Z:
      mpz_set (params->P[index_dest].mpz, params->P[index_src].mpz);
      return 0;
    case GMP_Q:
      mpq_set (params->P[index_dest].mpq, params->P[index_src].mpq);
      return 0;
    case GMP_F:
      mpf_set (params->P[index_dest].mpf, params->P[index_src].mpf);
      return 0;

    case MPFR:
      /* need same precision between source, destination, and reference */
      pre1 = mpfr_get_prec (params->P[index_dest].mpfr);
      pre2 = mpfr_get_prec (params->P[index_src].mpfr);
      index_ref = index_dest + params->nbout + params->nbin;
      if (pre1 != pre2
          || pre1 != mpfr_get_prec (params->P[index_ref].mpfr))
        return -1;

      tpl_copy_mpfr (params->P[index_dest].mpfr, params->P[index_src].mpfr);
      return 0;

    case MPC:
      mpc_get_prec2 (&pre1, &pim1, params->P[index_dest].mpc);
      /* check same precision between source and destination */
      mpc_get_prec2 (&pre2, &pim2, params->P[index_src].mpc);
      if (pre1 != pre2 || pim1 != pim2)
        return -1;
      /* check same precision between source and reference */
      index_ref = index_dest + params->nbout + params->nbin;
      mpc_get_prec2 (&pre2, &pim2, params->P[index_ref].mpc);
      if (pre1 != pre2 || pim1 != pim2)
        return -1;

      tpl_copy_mpc (params->P[index_dest].mpc, params->P[index_src].mpc);
      return 0;

    case NATIVE_STRING:
    case MPFR_INEX:     case MPFR_RND:
    case MPC_INEX:      case MPC_RND:
    case MPCC_INEX:
      /* no supported copy */
      break;
    }
```

```
  fprintf (stderr, "copy_parameter: unsupported type.\n");
  exit (1);
}
```

3.65 mpfr

```
mpfr
----------------------------------------------------------------------
mpfr/src/copysign.c
----------------------------------------------------------------------
/* mpfr_copysign -- Produce a value with the magnitude of x and sign bit of y

Copyright 2001-2004, 2006-2018 Free Software Foundation, Inc.
Contributed by the AriC and Caramba projects, INRIA.

This file is part of the GNU MPFR Library.

The GNU MPFR Library is free software; you can redistribute it and/or modify
it under the terms of the GNU Lesser General Public License as published by
the Free Software Foundation; either version 3 of the License, or (at your
option) any later version.

The GNU MPFR Library is distributed in the hope that it will be useful, but
WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY
or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU Lesser General Public
License for more details.

You should have received a copy of the GNU Lesser General Public License
along with the GNU MPFR Library; see the file COPYING.LESSER.  If not, see
http://www.gnu.org/licenses/ or write to the Free Software Foundation, Inc.,
51 Franklin St, Fifth Floor, Boston, MA 02110-1301, USA. */

#include "mpfr-impl.h"

 /*
   The computation of z with magnitude of x and sign of y:
   z = (-1)^signbit(y) * abs(x), i.e. with the same sign bit as y,
   even if z is a NaN.
   Note: This function implements copysign from the IEEE-754 standard
   when no rounding occurs (e.g. if PREC(z) >= PREC(x)).
 */

#undef mpfr_copysign
int
mpfr_copysign (mpfr_ptr z, mpfr_srcptr x, mpfr_srcptr y, mpfr_rnd_t rnd_mode)
{
  return mpfr_set4 (z, x, rnd_mode, MPFR_SIGN (y));
}
----------------------------------------------------------------------
mpfr/COPYING.LESSER
----------------------------------------------------------------------
                   GNU LESSER GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.


  This version of the GNU Lesser General Public License incorporates
the terms and conditions of version 3 of the GNU General Public
```

License, supplemented by the additional permissions listed below.

  0. Additional Definitions.

  As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

  "The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

  An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

  A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

  The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

  The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

  1. Exception to Section 3 of the GNU GPL.

  You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

  2. Conveying Modified Versions.

  If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

   a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

   b) under the GNU GPL, with none of the additional permissions of this License applicable to that copy.

  3. Object Code Incorporating Material from Library Header Files.

  The object code form of an Application may incorporate material from a header file that is part of the Library. You may convey such object code under terms of your choice, provided that, if the incorporated material is not limited to numerical parameters, data structure layouts and accessors, or small macros, inline functions and templates

(ten or fewer lines in length), you do both of the following:

   a) Give prominent notice with each copy of the object code that the
   Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the object code with a copy of the GNU GPL and this license
   document.

  4. Combined Works.

  You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

   a) Give prominent notice with each copy of the Combined Work that
   the Library is used in it and that the Library and its use are
   covered by this License.

   b) Accompany the Combined Work with a copy of the GNU GPL and this license
   document.

   c) For a Combined Work that displays copyright notices during
   execution, include the copyright notice for the Library among
   these notices, as well as a reference directing the user to the
   copies of the GNU GPL and this license document.

   d) Do one of the following:

       0) Convey the Minimal Corresponding Source under the terms of this
       License, and the Corresponding Application Code in a form
       suitable for, and under terms that permit, the user to
       recombine or relink the Application with a modified version of
       the Linked Version to produce a modified Combined Work, in the
       manner specified by section 6 of the GNU GPL for conveying
       Corresponding Source.

       1) Use a suitable shared library mechanism for linking with the
       Library. A suitable mechanism is one that (a) uses at run time
       a copy of the Library already present on the user's computer
       system, and (b) will operate properly with a modified version
       of the Library that is interface-compatible with the Linked
       Version.

   e) Provide Installation Information, but only if you would otherwise
   be required to provide such information under section 6 of the
   GNU GPL, and only to the extent that such information is
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
   the Minimal Corresponding Source and Corresponding Application
   Code. If you use option 4d1, you must provide the Installation
   Information in the manner specified by section 6 of the GNU GPL
   for conveying Corresponding Source.)

  5. Combined Libraries.

```
  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

   a) Accompany the combined library with a copy of the same work based
   on the Library, uncombined with any other library facilities,
   conveyed under the terms of this License.

   b) Give prominent notice with the combined library that part of it
   is a work based on the Library, and explaining where to find the
   accompanying uncombined form of the same work.

  6. Revised Versions of the GNU Lesser General Public License.

  The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----------------------------------------------------------------------
mpfr/COPYING
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
```

your programs, too.

  When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's

System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

```
  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7.  This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy.  This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged.  This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.
```

b) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain
clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object

code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in

reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same

material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

```
  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work.  The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time.  Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number.  If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation.  If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
```

SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program> Copyright (C) <year> <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

```
  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.66 ncurses

```
ncurses
--------------------------------------------------------------------
ncurses/test/package/debian/copyright
--------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses-examples.html

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

--------------------------------------------------------------------------------
Files: *
Copyright: 1998-2017,2018 Free Software Foundation, Inc.
Licence: X11

Files: aclocal.m4 package
Copyright: 2003-2017,2018 by Thomas E. Dickey
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

--------------------------------------------------------------------------------
Files: install-sh
Copyright:  1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.
```

```
    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

    FSF changes to this file are in the public domain.

    Calling this script install-sh is preferred over install.sh, to prevent
    `make' implicit rules from creating a file called install from it
    when there is no Makefile.

    This script is compatible with the BSD install script, but was written
    from scratch.  It can only install one file at a time, a restriction
    shared with many OS's install programs.

On Debian systems, the complete text of the GNU General
Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8
--------------------------------------------------------------------
ncurses/test/package/debian-mingw/copyright
--------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses-examples.html

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

--------------------------------------------------------------------------------
Files: *
Copyright: 1998-2017,2018 Free Software Foundation, Inc.
Licence: X11

Files: aclocal.m4 package
Copyright: 2003-2017,2018 by Thomas E. Dickey
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
```

```
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

--------------------------------------------------------------------------------
Files: install-sh
Copyright:  1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

    FSF changes to this file are in the public domain.

    Calling this script install-sh is preferred over install.sh, to prevent
    `make' implicit rules from creating a file called install from it
    when there is no Makefile.

    This script is compatible with the BSD install script, but was written
    from scratch.  It can only install one file at a time, a restriction
    shared with many OS's install programs.

On Debian systems, the complete text of the GNU General
Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8
-------------------------------------------------------------------
ncurses/test/package/debian-mingw64/copyright
-------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses-examples.html

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

--------------------------------------------------------------------------------
Files: *
Copyright: 1998-2017,2018 Free Software Foundation, Inc.
```

```
Licence: X11

Files: aclocal.m4 package
Copyright: 2003-2017,2018 by Thomas E. Dickey
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

--------------------------------------------------------------------------------
Files: install-sh
Copyright:  1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

    FSF changes to this file are in the public domain.
```

```
    Calling this script install-sh is preferred over install.sh, to prevent
    `make' implicit rules from creating a file called install from it
    when there is no Makefile.

    This script is compatible with the BSD install script, but was written
    from scratch.  It can only install one file at a time, a restriction
    shared with many OS's install programs.

On Debian systems, the complete text of the GNU General
Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8
---------------------------------------------------------------------
ncurses/Ada95/package/debian/copyright
---------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses-examples.html

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

---------------------------------------------------------------------------------
Files: *
Copyright: 1998-2017,2018 Free Software Foundation, Inc.
Licence: X11

Files: aclocal.m4 package
Copyright: 2010-2017,2018 by Thomas E. Dickey
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

---------------------------------------------------------------------------------
Files: install-sh
Copyright:  1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
```

```
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

    FSF changes to this file are in the public domain.

    Calling this script install-sh is preferred over install.sh, to prevent
    `make' implicit rules from creating a file called install from it
    when there is no Makefile.

    This script is compatible with the BSD install script, but was written
    from scratch.  It can only install one file at a time, a restriction
    shared with many OS's install programs.

On Debian systems, the complete text of the GNU General
Public License can be found in '/usr/share/common-licenses/GPL-2'

-- vile: txtmode file-encoding=utf-8
--------------------------------------------------------------------
ncurses/COPYING
--------------------------------------------------------------------
Copyright (c) 1998-2017,2018 Free Software Foundation, Inc.

Permission is hereby granted, free of charge, to any person obtaining a
copy of this software and associated documentation files (the
"Software"), to deal in the Software without restriction, including
without limitation the rights to use, copy, modify, merge, publish,
distribute, distribute with modifications, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included
in all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name(s) of the above copyright
```

```
holders shall not be used in advertising or otherwise to promote the
sale, use or other dealings in this Software without prior written
authorization.

-- vile:txtmode fc=72
-- $Id: COPYING,v 1.6 2018/01/01 12:00:00 tom Exp $
---------------------------------------------------------------------
ncurses/package/debian/copyright
---------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses.html
This package is used for testing builds of ncurses.

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

---------------------------------------------------------------------------
Files: *
Copyright: 1998-2017,2018 Free Software Foundation, Inc.
Licence: X11

Files: aclocal.m4 package
Copyright: 1996-2017,2018 by Thomas E. Dickey
Licence: X11

Files: doc/html/NCURSES-Programming-HOWTO.html
Copyright: 2001 by Pradeep Padala
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

---------------------------------------------------------------------------
Files: install-sh
Copyright:  1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
```

```
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

--------------------------------------------------------------------------------
Files: progs/tset.c ncurses/tinfo/read_termcap.c
Copyright: 1980,1991,1992,1993 The Regents of the University of California.
License: BSD

    Redistribution and use in source and binary forms, with or without
    modification, are permitted provided that the following conditions
    are met:
    1. Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
    3. Neither the name of the University nor the names of its contributors
       may be used to endorse or promote products derived from this software
       without specific prior written permission.

    THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
    ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
    IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
    ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
    FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
    DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
    OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
    HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
    LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
    OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
    SUCH DAMAGE.

-- vile: txtmode file-encoding=utf-8
-------------------------------------------------------------------
ncurses/package/debian-mingw/copyright
-------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses.html
This package is used for testing builds of ncurses.

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

--------------------------------------------------------------------------------
Files: *
```

Copyright: 1998-2017,2018 Free Software Foundation, Inc.
Licence: X11

Files: aclocal.m4 package
Copyright: 1996-2017,2018 by Thomas E. Dickey
Licence: X11

Files: doc/html/NCURSES-Programming-HOWTO.html
Copyright: 2001 by Pradeep Padala
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

Files: install-sh
Copyright: 1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-

```
    ings in this Software without prior written authorization from the X Consor-
    tium.

-------------------------------------------------------------------------------
Files: progs/tset.c ncurses/tinfo/read_termcap.c
Copyright: 1980,1991,1992,1993 The Regents of the University of California.
License: BSD

    Redistribution and use in source and binary forms, with or without
    modification, are permitted provided that the following conditions
    are met:
    1. Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
    3. Neither the name of the University nor the names of its contributors
       may be used to endorse or promote products derived from this software
       without specific prior written permission.

    THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
    ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
    IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
    ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
    FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
    DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
    OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
    HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
    LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
    OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
    SUCH DAMAGE.

-- vile: txtmode file-encoding=utf-8
---------------------------------------------------------------------
ncurses/package/debian-mingw64/copyright
---------------------------------------------------------------------
Upstream source https://invisible-island.net/ncurses/ncurses.html
This package is used for testing builds of ncurses.

Current ncurses maintainer: Thomas Dickey <dickey@invisible-island.net>

-------------------------------------------------------------------------------
Files: *
Copyright: 1998-2017,2018 Free Software Foundation, Inc.
Licence: X11

Files: aclocal.m4 package
Copyright: 1996-2017,2018 by Thomas E. Dickey
Licence: X11

Files: doc/html/NCURSES-Programming-HOWTO.html
Copyright: 2001 by Pradeep Padala
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a
    copy of this software and associated documentation files (the
    "Software"), to deal in the Software without restriction, including
    without limitation the rights to use, copy, modify, merge, publish,
    distribute, distribute with modifications, sublicense, and/or sell
```

```
    copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included
    in all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS
    OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF
    MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.
    IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,
    DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR
    OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR
    THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name(s) of the above copyright
    holders shall not be used in advertising or otherwise to promote the
    sale, use or other dealings in this Software without prior written
    authorization.

--------------------------------------------------------------------------------
Files: install-sh
Copyright:  1994 X Consortium
Licence: X11

    Permission is hereby granted, free of charge, to any person obtaining a copy
    of this software and associated documentation files (the "Software"), to
    deal in the Software without restriction, including without limitation the
    rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
    sell copies of the Software, and to permit persons to whom the Software is
    furnished to do so, subject to the following conditions:

    The above copyright notice and this permission notice shall be included in
    all copies or substantial portions of the Software.

    THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
    IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
    FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
    X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
    AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNEC-
    TION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

    Except as contained in this notice, the name of the X Consortium shall not
    be used in advertising or otherwise to promote the sale, use or other deal-
    ings in this Software without prior written authorization from the X Consor-
    tium.

--------------------------------------------------------------------------------
Files: progs/tset.c ncurses/tinfo/read_termcap.c
Copyright: 1980,1991,1992,1993 The Regents of the University of California.
License: BSD

    Redistribution and use in source and binary forms, with or without
    modification, are permitted provided that the following conditions
    are met:
    1. Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.
    2. Redistributions in binary form must reproduce the above copyright
       notice, this list of conditions and the following disclaimer in the
       documentation and/or other materials provided with the distribution.
```

```
    3. Neither the name of the University nor the names of its contributors
       may be used to endorse or promote products derived from this software
       without specific prior written permission.

    THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
    ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
    IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
    ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
    FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
    DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
    OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
    HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
    LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
    OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
    SUCH DAMAGE.

-- vile: txtmode file-encoding=utf-8
```

3.67 net-snmp

```
net-snmp
--------------------------------------------------------------------
net-snmp/COPYING
--------------------------------------------------------------------
Various copyrights apply to this package, listed in various separate
parts below.  Please make sure that you read all the parts.

---- Part 1: CMU/UCD copyright notice: (BSD like) -----


       Copyright 1989, 1991, 1992 by Carnegie Mellon University

                  Derivative Work - 1996, 1998-2000
Copyright 1996, 1998-2000 The Regents of the University of California

                        All Rights Reserved

Permission to use, copy, modify and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appears in all copies and
that both that copyright notice and this permission notice appear in
supporting documentation, and that the name of CMU and The Regents of
the University of California not be used in advertising or publicity
pertaining to distribution of the software without specific written
permission.

CMU AND THE REGENTS OF THE UNIVERSITY OF CALIFORNIA DISCLAIM ALL
WARRANTIES WITH REGARD TO THIS SOFTWARE, INCLUDING ALL IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS.  IN NO EVENT SHALL CMU OR
THE REGENTS OF THE UNIVERSITY OF CALIFORNIA BE LIABLE FOR ANY SPECIAL,
INDIRECT OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES WHATSOEVER RESULTING
FROM THE LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION OF
CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN
CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.


---- Part 2: Networks Associates Technology, Inc copyright notice (BSD) -----

Copyright (c) 2001-2003, Networks Associates Technology, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

*  Neither the name of the Networks Associates Technology, Inc nor the
   names of its contributors may be used to endorse or promote
   products derived from this software without specific prior written
   permission.
```

```
THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS
IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 3: Cambridge Broadband Ltd. copyright notice (BSD) -----

Portions of this code are copyright (c) 2001-2003, Cambridge Broadband Ltd.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

*  The name of Cambridge Broadband Ltd. may not be used to endorse or
   promote products derived from this software without specific prior
   written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDER BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.


---- Part 4: Sun Microsystems, Inc. copyright notice (BSD) -----

Copyright © 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara,
California 95054, U.S.A. All rights reserved.

Use is subject to license terms below.

This distribution may include materials developed by third parties.

Sun, Sun Microsystems, the Sun logo and Solaris are trademarks or registered
trademarks of Sun Microsystems, Inc. in the U.S. and other countries.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:
```

```
*  Redistributions of source code must retain the above copyright notice,
    this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
    notice, this list of conditions and the following disclaimer in the
    documentation and/or other materials provided with the distribution.

*  Neither the name of the Sun Microsystems, Inc. nor the
    names of its contributors may be used to endorse or promote
    products derived from this software without specific prior written
    permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS
IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 5: Sparta, Inc copyright notice (BSD) -----

Copyright (c) 2003-2013, Sparta, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

*  Neither the name of Sparta, Inc nor the names of its contributors may
   be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS
IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 6: Cisco/BUPTNIC copyright notice (BSD) -----

Copyright (c) 2004, Cisco, Inc and Information Network
```

```
Center of Beijing University of Posts and Telecommunications.
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

*  Neither the name of Cisco, Inc, Beijing University of Posts and
   Telecommunications, nor the names of their contributors may
   be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS
IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 7: Fabasoft R&D Software GmbH & Co KG copyright notice (BSD) -----

Copyright (c) Fabasoft R&D Software GmbH & Co KG, 2003
oss@fabasoft.com
Author: Bernhard Penz <bernhard.penz@fabasoft.com>

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

*  The name of Fabasoft R&D Software GmbH & Co KG or any of its subsidiaries,
   brand or product names may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDER ``AS IS'' AND ANY
EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDER BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
```

OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN
IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 8: Apple Inc. copyright notice (BSD) -----

Copyright (c) 2007 Apple Inc. All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above
copyright notice, this list of conditions and the following
disclaimer in the documentation and/or other materials provided
with the distribution.
3. Neither the name of Apple Inc. ("Apple") nor the names of its
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY APPLE AND ITS CONTRIBUTORS "AS IS" AND
ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL APPLE OR ITS
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF
USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY,
OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT
OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
SUCH DAMAGE.

---- Part 9: ScienceLogic, LLC copyright notice (BSD) -----

Copyright (c) 2009, ScienceLogic, LLC
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

* Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

* Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

* Neither the name of ScienceLogic, LLC nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,

```
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.

---- Part 10: IETF copyright notice (BSD) -----

Copyright (c) 2013 IETF Trust and the persons identified as authors of
the code.  All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

· Redistributions of source code must retain the above copyright notice,
this list of conditions and the following disclaimer.

· Redistributions in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.

· Neither the name of Internet Society, IETF or IETF Trust, nor the
names of specific contributors, may be used to endorse or promote
products derived from this software without specific prior written
permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS “AS”
IS AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED
TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT OWNER
OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR
PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
-------------------------------------------------------------------
net-snmp/python/LICENSE
-------------------------------------------------------------------
Various copyrights apply to this package, listed in various separate
parts below.  Please make sure that you read all the parts.

---- Part 1: Sparta, Inc (BSD) -----

Copyright (c) 2003-2010, Sparta, Inc
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
```

```
   documentation and/or other materials provided with the distribution.

*  Neither the name of Sparta, Inc nor the names of its contributors may
   be used to endorse or promote products derived from this software
   without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS ``AS
IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT HOLDERS OR
CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL,
EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO,
PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS;
OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR
OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF
ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

---- Part 2: ScienceLogic, LLC (BSD) ----

Copyright (c) 2006, ScienceLogic, LLC
All rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

*  Redistributions of source code must retain the above copyright notice,
   this list of conditions and the following disclaimer.

*  Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.

*  Neither the name of ScienceLogic, LLC nor the names of its
   contributors may be used to endorse or promote products derived
   from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR
A PARTICULAR PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT
HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING,
BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS
OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND
ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR
TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
```

3.68 net-tools

```
net-tools
-----------------------------------------------------------------
net-tools/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                          675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

```
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)


These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
```

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

        Appendix: How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19yy name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
```

3.69 ntp

```
ntp
---------------------------------------------------------------------
ntp/COPYRIGHT
---------------------------------------------------------------------
This file is automatically generated from html/copyright.html

  Copyright Notice

   jpg "Clone me," says Dolly sheepishly.

   Last update: 2-Jan-2017 11:58 UTC
     ___________________________________________________________________

   The following copyright notice applies to all files collectively
   called the Network Time Protocol Version 4 Distribution. Unless
   specifically declared otherwise in an individual file, this entire
   notice applies as if the text was explicitly included in the file.
*************************************************************************
*                                                                       *
* Copyright (c) University of Delaware 1992-2015                        *
*                                                                       *
* Permission to use, copy, modify, and distribute this software and     *
* its documentation for any purpose with or without fee is hereby       *
* granted, provided that the above copyright notice appears in all      *
* copies and that both the copyright notice and this permission         *
* notice appear in supporting documentation, and that the name          *
* University of Delaware not be used in advertising or publicity        *
* pertaining to distribution of the software without specific,          *
* written prior permission. The University of Delaware makes no         *
* representations about the suitability this software for any           *
* purpose. It is provided "as is" without express or implied            *
* warranty.                                                             *
*                                                                       *
*************************************************************************

   Content starting in 2011 from Harlan Stenn, Danny Mayer, and Martin
   Burnicki is:
*************************************************************************
*                                                                       *
* Copyright (c) Network Time Foundation 2011-2017                       *
*                                                                       *
* All Rights Reserved                                                   *
*                                                                       *
* Redistribution and use in source and binary forms, with or without    *
* modification, are permitted provided that the following conditions    *
* are met:                                                              *
* 1. Redistributions of source code must retain the above copyright     *
*    notice, this list of conditions and the following disclaimer.      *
* 2. Redistributions in binary form must reproduce the above            *
*    copyright notice, this list of conditions and the following        *
*    disclaimer in the documentation and/or other materials provided    *
*    with the distribution.                                             *
*                                                                       *
* THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS'' AND ANY EXPRESS    *
* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED     *
```

```
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  *
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE    *
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR *
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT   *
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  *
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF          *
* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT           *
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE   *
* USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH    *
* DAMAGE.                                                             *
***********************************************************************
```

The following individuals contributed in part to the Network Time Protocol Distribution Version 4 and are acknowledged as authors of this work.

1. [1]Takao Abe <takao_abe@xurb.jp> Clock driver for JJY receivers
2. [2]Mark Andrews <mark_andrews@isc.org> Leitch atomic clock controller
3. [3]Bernd Altmeier <altmeier@atlsoft.de> hopf Elektronik serial line and PCI-bus devices
4. [4]Viraj Bais <vbais@mailman1.intel.com> and [5]Clayton Kirkwood <kirkwood@striderfm.intel.com> port to WindowsNT 3.5
5. [6]Michael Barone <michael,barone@lmco.com> GPSVME fixes
6. [7]Karl Berry <karl@owl.HQ.ileaf.com> syslog to file option
7. [8]Greg Brackley <greg.brackley@bigfoot.com> Major rework of WINNT port. Clean up recvbuf and iosignal code into separate modules.
8. [9]Marc Brett <Marc.Brett@westgeo.com> Magnavox GPS clock driver
9. [10]Piete Brooks <Piete.Brooks@cl.cam.ac.uk> MSF clock driver, Trimble PARSE support
10. [11]Nelson B Bolyard <nelson@bolyard.me> update and complete broadcast and crypto features in sntp
11. [12]Jean-Francois Boudreault <Jean-Francois.Boudreault@viagenie.qc.ca> IPv6 support
12. [13]Reg Clemens <reg@dwf.com> Oncore driver (Current maintainer)
13. [14]Steve Clift <clift@ml.csiro.au> OMEGA clock driver
14. [15]Casey Crellin <casey@csc.co.za> vxWorks (Tornado) port and help with target configuration
15. [16]Sven Dietrich <sven_dietrich@trimble.com> Palisade reference clock driver, NT adj. residuals, integrated Greg's Winnt port.
16. [17]John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX port
17. [18]Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Linux port
18. [19]Dennis Ferguson <dennis@mrbill.canet.ca> foundation code for NTP Version 2 as specified in RFC-1119
19. [20]John Hay <jhay@icomtek.csir.co.za> IPv6 support and testing
20. [21]Dave Hart <davehart@davehart.com> General maintenance, Windows port interpolation rewrite
21. [22]Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X clock driver
22. [23]Glenn Hollinger <glenn@herald.usask.ca> GOES clock driver
23. [24]Mike Iglesias <iglesias@uci.edu> DEC Alpha port
24. [25]Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX port
25. [26]Jeff Johnson <jbj@chatham.usdesign.com> massive prototyping overhaul
26. [27]Hans Lambermont <Hans.Lambermont@nl.origin-it.com> or [28]<H.Lambermont@chello.nl> ntpsweep
27. [29]Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver (Original author)
28. [30]Frank Kardel [31]<kardel (at) ntp (dot) org> PARSE <GENERIC> (driver 14 reference clocks), STREAMS modules for PARSE, support

scripts, syslog cleanup, dynamic interface handling
29. [32]Johannes Maximilian Kuehn <kuehn@ntp.org> Rewrote sntp to comply with NTPv4 specification, ntpq saveconfig
30. [33]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX modifications, HPUX modifications
31. [34]Dave Katz <dkatz@cisco.com> RS/6000 AIX port
32. [35]Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
33. [36]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
34. [37]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
35. [38]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
36. [39]Danny Mayer <mayer@ntp.org>Network I/O, Windows Port, Code Maintenance
37. [40]David L. Mills <mills@udel.edu> Version 4 foundation, precision kernel; clock drivers: 1, 3, 4, 6, 7, 11, 13, 18, 19, 22, 36
38. [41]Wolfgang Moeller <moeller@gwdgv1.dnet.gwdg.de> VMS port
39. [42]Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility
40. [43]Tom Moore <tmoore@fievel.daytonoh.ncr.com> i386 svr4 port
41. [44]Kamal A Mostafa <kamal@whence.com> SCO OpenServer port
42. [45]Derek Mulcahy <derek@toybox.demon.co.uk> and [46]Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver
43. [47]Rob Neal <neal@ntp.org> Bancomm refclock and config/parse code maintenance
44. [48]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
45. [49]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port
46. [50]Wilfredo Sánchez <wsanchez@apple.com> added support for NetInfo
47. [51]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
48. [52]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
49. [53]Ray Schnitzler <schnitz@unipress.com> Unixware1 port
50. [54]Michael Shields <shields@tembel.org> USNO clock driver
51. [55]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
52. [56]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure makeover, various other bits (see the ChangeLog)
53. [57]Kenneth Stone <ken@sdd.hp.com> HP-UX port
54. [58]Ajit Thyagarajan <ajit@ee.udel.edu>IP multicast/anycast support
55. [59]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp>TRAK clock driver
56. [60]Brian Utterback <brian.utterback@oracle.com> General codebase, Solaris issues
57. [61]Loganaden Velvindron <loganaden@gmail.com> Sandboxing (libseccomp) support
58. [62]Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver
59. [63]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

References

1. mailto:%20takao_abe@xurb.jp
2. mailto:%20mark_andrews@isc.org
3. mailto:%20altmeier@atlsoft.de

4. mailto:%20vbais@mailman1.intel.co
5. mailto:%20kirkwood@striderfm.intel.com
6. mailto:%20michael.barone@lmco.com
7. mailto:%20karl@owl.HQ.ileaf.com
8. mailto:%20greg.brackley@bigfoot.com
9. mailto:%20Marc.Brett@westgeo.com
10. mailto:%20Piete.Brooks@cl.cam.ac.uk
11. mailto:%20nelson@bolyard.me
12. mailto:%20Jean-Francois.Boudreault@viagenie.qc.ca
13. mailto:%20reg@dwf.com
14. mailto:%20clift@ml.csiro.au
15. mailto:%20casey@csc.co.za
16. mailto:%20Sven_Dietrich@trimble.COM
17. mailto:%20dundas@salt.jpl.nasa.gov
18. mailto:%20duwe@immd4.informatik.uni-erlangen.de
19. mailto:%20dennis@mrbill.canet.ca
20. mailto:%20jhay@icomtek.csir.co.za
21. mailto:%20davehart@davehart.com
22. mailto:%20neoclock4x@linum.com
23. mailto:%20glenn@herald.usask.ca
24. mailto:%20iglesias@uci.edu
25. mailto:%20jagubox.gsfc.nasa.gov
26. mailto:%20jbj@chatham.usdesign.com
27. mailto:%20Hans.Lambermont@nl.origin-it.com
28. mailto:H.Lambermont@chello.nl
29. mailto:%20phk@FreeBSD.ORG
30. http://www4.informatik.uni-erlangen.de/%7ekardel
31. mailto:%20kardel%20%28at%29%20ntp%20%28dot%29%20org
32. mailto:kuehn@ntp.org
33. mailto:%20jones@hermes.chpc.utexas.edu
34. mailto:%20dkatz@cisco.com
35. mailto:%20leres@ee.lbl.gov
36. mailto:%20lindholm@ucs.ubc.ca
37. mailto:%20louie@ni.umd.edu
38. mailto:%20thorinn@diku.dk
39. mailto:%20mayer@ntp.org
40. mailto:%20mills@udel.edu
41. mailto:%20moeller@gwdgv1.dnet.gwdg.de
42. mailto:%20mogul@pa.dec.com
43. mailto:%20tmoore@fievel.daytonoh.ncr.com
44. mailto:%20kamal@whence.com
45. mailto:%20derek@toybox.demon.co.uk
46. mailto:%20d@hd.org
47. mailto:%20neal@ntp.org
48. mailto:%20Rainer.Pruy@informatik.uni-erlangen.de
49. mailto:%20dirce@zk3.dec.com
50. mailto:%20wsanchez@apple.com
51. mailto:%20mrapple@quack.kfu.com
52. mailto:%20jack@innovativeinternet.com
53. mailto:%20schnitz@unipress.com
54. mailto:%20shields@tembel.org
55. mailto:%20pebbles.jpl.nasa.gov
56. mailto:%20harlan@pfcs.com
57. mailto:%20ken@sdd.hp.com
58. mailto:%20ajit@ee.udel.edu
59. mailto:%20tsuruoka@nc.fukuoka-u.ac.jp
60. mailto:%20brian.utterback@oracle.com
61. mailto:%20loganaden@gmail.com
62. mailto:%20vixie@vix.com

```
  63. mailto:%20Ulrich.Windl@rz.uni-regensburg.de
------------------------------------------------------------------
ntp/sntp/COPYRIGHT
------------------------------------------------------------------
This file is automatically generated from html/copyright.html

  Copyright Notice

   jpg "Clone me," says Dolly sheepishly.

   Last update: 2-Jan-2017 11:58 UTC
     ___________________________________________________________________

   The following copyright notice applies to all files collectively
   called the Network Time Protocol Version 4 Distribution. Unless
   specifically declared otherwise in an individual file, this entire
   notice applies as if the text was explicitly included in the file.
*************************************************************************
*                                                                       *
* Copyright (c) University of Delaware 1992-2015                        *
*                                                                       *
* Permission to use, copy, modify, and distribute this software and     *
* its documentation for any purpose with or without fee is hereby       *
* granted, provided that the above copyright notice appears in all      *
* copies and that both the copyright notice and this permission         *
* notice appear in supporting documentation, and that the name          *
* University of Delaware not be used in advertising or publicity        *
* pertaining to distribution of the software without specific,          *
* written prior permission. The University of Delaware makes no         *
* representations about the suitability this software for any           *
* purpose. It is provided "as is" without express or implied            *
* warranty.                                                             *
*                                                                       *
*************************************************************************

   Content starting in 2011 from Harlan Stenn, Danny Mayer, and Martin
   Burnicki is:
*************************************************************************
*                                                                       *
* Copyright (c) Network Time Foundation 2011-2017                       *
*                                                                       *
* All Rights Reserved                                                   *
*                                                                       *
* Redistribution and use in source and binary forms, with or without    *
* modification, are permitted provided that the following conditions    *
* are met:                                                              *
* 1. Redistributions of source code must retain the above copyright     *
*    notice, this list of conditions and the following disclaimer.      *
* 2. Redistributions in binary form must reproduce the above            *
*    copyright notice, this list of conditions and the following        *
*    disclaimer in the documentation and/or other materials provided    *
*    with the distribution.                                             *
*                                                                       *
* THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS'' AND ANY EXPRESS    *
* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED     *
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE    *
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE      *
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR   *
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT     *
```

```
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  *
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF          *
* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT           *
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE   *
* USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH    *
* DAMAGE.                                                             *
**********************************************************************
```

The following individuals contributed in part to the Network Time Protocol Distribution Version 4 and are acknowledged as authors of this work.

1. [1]Takao Abe <takao_abe@xurb.jp> Clock driver for JJY receivers
2. [2]Mark Andrews <mark_andrews@isc.org> Leitch atomic clock controller
3. [3]Bernd Altmeier <altmeier@atlsoft.de> hopf Elektronik serial line and PCI-bus devices
4. [4]Viraj Bais <vbais@mailman1.intel.com> and [5]Clayton Kirkwood <kirkwood@striderfm.intel.com> port to WindowsNT 3.5
5. [6]Michael Barone <michael,barone@lmco.com> GPSVME fixes
6. [7]Karl Berry <karl@owl.HQ.ileaf.com> syslog to file option
7. [8]Greg Brackley <greg.brackley@bigfoot.com> Major rework of WINNT port. Clean up recvbuf and iosignal code into separate modules.
8. [9]Marc Brett <Marc.Brett@westgeo.com> Magnavox GPS clock driver
9. [10]Piete Brooks <Piete.Brooks@cl.cam.ac.uk> MSF clock driver, Trimble PARSE support
10. [11]Nelson B Bolyard <nelson@bolyard.me> update and complete broadcast and crypto features in sntp
11. [12]Jean-Francois Boudreault <Jean-Francois.Boudreault@viagenie.qc.ca> IPv6 support
12. [13]Reg Clemens <reg@dwf.com> Oncore driver (Current maintainer)
13. [14]Steve Clift <clift@ml.csiro.au> OMEGA clock driver
14. [15]Casey Crellin <casey@csc.co.za> vxWorks (Tornado) port and help with target configuration
15. [16]Sven Dietrich <sven_dietrich@trimble.com> Palisade reference clock driver, NT adj. residuals, integrated Greg's Winnt port.
16. [17]John A. Dundas III <dundas@salt.jpl.nasa.gov> Apple A/UX port
17. [18]Torsten Duwe <duwe@immd4.informatik.uni-erlangen.de> Linux port
18. [19]Dennis Ferguson <dennis@mrbill.canet.ca> foundation code for NTP Version 2 as specified in RFC-1119
19. [20]John Hay <jhay@icomtek.csir.co.za> IPv6 support and testing
20. [21]Dave Hart <davehart@davehart.com> General maintenance, Windows port interpolation rewrite
21. [22]Claas Hilbrecht <neoclock4x@linum.com> NeoClock4X clock driver
22. [23]Glenn Hollinger <glenn@herald.usask.ca> GOES clock driver
23. [24]Mike Iglesias <iglesias@uci.edu> DEC Alpha port
24. [25]Jim Jagielski <jim@jagubox.gsfc.nasa.gov> A/UX port
25. [26]Jeff Johnson <jbj@chatham.usdesign.com> massive prototyping overhaul
26. [27]Hans Lambermont <Hans.Lambermont@nl.origin-it.com> or [28]<H.Lambermont@chello.nl> ntpsweep
27. [29]Poul-Henning Kamp <phk@FreeBSD.ORG> Oncore driver (Original author)
28. [30]Frank Kardel [31]<kardel (at) ntp (dot) org> PARSE <GENERIC> (driver 14 reference clocks), STREAMS modules for PARSE, support scripts, syslog cleanup, dynamic interface handling
29. [32]Johannes Maximilian Kuehn <kuehn@ntp.org> Rewrote sntp to comply with NTPv4 specification, ntpq saveconfig
30. [33]William L. Jones <jones@hermes.chpc.utexas.edu> RS/6000 AIX

modifications, HPUX modifications
31. [34]Dave Katz <dkatz@cisco.com> RS/6000 AIX port
32. [35]Craig Leres <leres@ee.lbl.gov> 4.4BSD port, ppsclock, Magnavox GPS clock driver
33. [36]George Lindholm <lindholm@ucs.ubc.ca> SunOS 5.1 port
34. [37]Louis A. Mamakos <louie@ni.umd.edu> MD5-based authentication
35. [38]Lars H. Mathiesen <thorinn@diku.dk> adaptation of foundation code for Version 3 as specified in RFC-1305
36. [39]Danny Mayer <mayer@ntp.org>Network I/O, Windows Port, Code Maintenance
37. [40]David L. Mills <mills@udel.edu> Version 4 foundation, precision kernel; clock drivers: 1, 3, 4, 6, 7, 11, 13, 18, 19, 22, 36
38. [41]Wolfgang Moeller <moeller@gwdgv1.dnet.gwdg.de> VMS port
39. [42]Jeffrey Mogul <mogul@pa.dec.com> ntptrace utility
40. [43]Tom Moore <tmoore@fievel.daytonoh.ncr.com> i386 svr4 port
41. [44]Kamal A Mostafa <kamal@whence.com> SCO OpenServer port
42. [45]Derek Mulcahy <derek@toybox.demon.co.uk> and [46]Damon Hart-Davis <d@hd.org> ARCRON MSF clock driver
43. [47]Rob Neal <neal@ntp.org> Bancomm refclock and config/parse code maintenance
44. [48]Rainer Pruy <Rainer.Pruy@informatik.uni-erlangen.de> monitoring/trap scripts, statistics file handling
45. [49]Dirce Richards <dirce@zk3.dec.com> Digital UNIX V4.0 port
46. [50]Wilfredo &#65533;Snchez <wsanchez@apple.com> added support for NetInfo
47. [51]Nick Sayer <mrapple@quack.kfu.com> SunOS streams modules
48. [52]Jack Sasportas <jack@innovativeinternet.com> Saved a Lot of space on the stuff in the html/pic/ subdirectory
49. [53]Ray Schnitzler <schnitz@unipress.com> Unixware1 port
50. [54]Michael Shields <shields@tembel.org> USNO clock driver
51. [55]Jeff Steinman <jss@pebbles.jpl.nasa.gov> Datum PTS clock driver
52. [56]Harlan Stenn <harlan@pfcs.com> GNU automake/autoconfigure makeover, various other bits (see the ChangeLog)
53. [57]Kenneth Stone <ken@sdd.hp.com> HP-UX port
54. [58]Ajit Thyagarajan <ajit@ee.udel.edu>IP multicast/anycast support
55. [59]Tomoaki TSURUOKA <tsuruoka@nc.fukuoka-u.ac.jp>TRAK clock driver
56. [60]Brian Utterback <brian.utterback@oracle.com> General codebase, Solaris issues
57. [61]Loganaden Velvindron <loganaden@gmail.com> Sandboxing (libseccomp) support
58. [62]Paul A Vixie <vixie@vix.com> TrueTime GPS driver, generic TrueTime clock driver
59. [63]Ulrich Windl <Ulrich.Windl@rz.uni-regensburg.de> corrected and validated HTML documents according to the HTML DTD

References

1. mailto:%20takao_abe@xurb.jp
2. mailto:%20mark_andrews@isc.org
3. mailto:%20altmeier@atlsoft.de
4. mailto:%20vbais@mailman1.intel.co
5. mailto:%20kirkwood@striderfm.intel.com
6. mailto:%20michael.barone@lmco.com
7. mailto:%20karl@owl.HQ.ileaf.com

8. mailto:%20greg.brackley@bigfoot.com
9. mailto:%20Marc.Brett@westgeo.com
10. mailto:%20Piete.Brooks@cl.cam.ac.uk
11. mailto:%20nelson@bolyard.me
12. mailto:%20Jean-Francois.Boudreault@viagenie.qc.ca
13. mailto:%20reg@dwf.com
14. mailto:%20clift@ml.csiro.au
15. mailto:%20casey@csc.co.za
16. mailto:%20Sven_Dietrich@trimble.COM
17. mailto:%20dundas@salt.jpl.nasa.gov
18. mailto:%20duwe@immd4.informatik.uni-erlangen.de
19. mailto:%20dennis@mrbill.canet.ca
20. mailto:%20jhay@icomtek.csir.co.za
21. mailto:%20davehart@davehart.com
22. mailto:%20neoclock4x@linum.com
23. mailto:%20glenn@herald.usask.ca
24. mailto:%20iglesias@uci.edu
25. mailto:%20jagubox.gsfc.nasa.gov
26. mailto:%20jbj@chatham.usdesign.com
27. mailto:%20Hans.Lambermont@nl.origin-it.com
28. mailto:H.Lambermont@chello.nl
29. mailto:%20phk@FreeBSD.ORG
30. http://www4.informatik.uni-erlangen.de/%7ekardel
31. mailto:%20kardel%20%28at%29%20ntp%20%28dot%29%20org
32. mailto:kuehn@ntp.org
33. mailto:%20jones@hermes.chpc.utexas.edu
34. mailto:%20dkatz@cisco.com
35. mailto:%20leres@ee.lbl.gov
36. mailto:%20lindholm@ucs.ubc.ca
37. mailto:%20louie@ni.umd.edu
38. mailto:%20thorinn@diku.dk
39. mailto:%20mayer@ntp.org
40. mailto:%20mills@udel.edu
41. mailto:%20moeller@gwdgv1.dnet.gwdg.de
42. mailto:%20mogul@pa.dec.com
43. mailto:%20tmoore@fievel.daytonoh.ncr.com
44. mailto:%20kamal@whence.com
45. mailto:%20derek@toybox.demon.co.uk
46. mailto:%20d@hd.org
47. mailto:%20neal@ntp.org
48. mailto:%20Rainer.Pruy@informatik.uni-erlangen.de
49. mailto:%20dirce@zk3.dec.com
50. mailto:%20wsanchez@apple.com
51. mailto:%20mrapple@quack.kfu.com
52. mailto:%20jack@innovativeinternet.com
53. mailto:%20schnitz@unipress.com
54. mailto:%20shields@tembel.org
55. mailto:%20pebbles.jpl.nasa.gov
56. mailto:%20harlan@pfcs.com
57. mailto:%20ken@sdd.hp.com
58. mailto:%20ajit@ee.udel.edu
59. mailto:%20tsuruoka@nc.fukuoka-u.ac.jp
60. mailto:%20brian.utterback@oracle.com
61. mailto:%20loganaden@gmail.com
62. mailto:%20vixie@vix.com
63. mailto:%20Ulrich.Windl@rz.uni-regensburg.de

---

ntp/sntp/libopts/COPYING.lgplv3

GNU LESSER GENERAL PUBLIC LICENSE
Version 3, 29 June 2007

Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

This version of the GNU Lesser General Public License incorporates the terms and conditions of version 3 of the GNU General Public License, supplemented by the additional permissions listed below.

0. Additional Definitions.

As used herein, "this License" refers to version 3 of the GNU Lesser General Public License, and the "GNU GPL" refers to version 3 of the GNU General Public License.

"The Library" refers to a covered work governed by this License, other than an Application or a Combined Work as defined below.

An "Application" is any work that makes use of an interface provided by the Library, but which is not otherwise based on the Library. Defining a subclass of a class defined by the Library is deemed a mode of using an interface provided by the Library.

A "Combined Work" is a work produced by combining or linking an Application with the Library. The particular version of the Library with which the Combined Work was made is also called the "Linked Version".

The "Minimal Corresponding Source" for a Combined Work means the Corresponding Source for the Combined Work, excluding any source code for portions of the Combined Work that, considered in isolation, are based on the Application, and not on the Linked Version.

The "Corresponding Application Code" for a Combined Work means the object code and/or source code for the Application, including any data and utility programs needed for reproducing the Combined Work from the Application, but excluding the System Libraries of the Combined Work.

1. Exception to Section 3 of the GNU GPL.

You may convey a covered work under sections 3 and 4 of this License without being bound by section 3 of the GNU GPL.

2. Conveying Modified Versions.

If you modify a copy of the Library, and, in your modifications, a facility refers to a function or data to be supplied by an Application that uses the facility (other than as an argument passed when the facility is invoked), then you may convey a copy of the modified version:

a) under this License, provided that you make a good faith effort to ensure that, in the event an Application does not supply the function or data, the facility still operates, and performs whatever part of its purpose remains meaningful, or

b) under the GNU GPL, with none of the additional permissions of
this License applicable to that copy.

3. Object Code Incorporating Material from Library Header Files.

The object code form of an Application may incorporate material from
a header file that is part of the Library. You may convey such object
code under terms of your choice, provided that, if the incorporated
material is not limited to numerical parameters, data structure
layouts and accessors, or small macros, inline functions and templates
(ten or fewer lines in length), you do both of the following:

a) Give prominent notice with each copy of the object code that the
Library is used in it and that the Library and its use are
covered by this License.

b) Accompany the object code with a copy of the GNU GPL and this license
document.

4. Combined Works.

You may convey a Combined Work under terms of your choice that,
taken together, effectively do not restrict modification of the
portions of the Library contained in the Combined Work and reverse
engineering for debugging such modifications, if you also do each of
the following:

a) Give prominent notice with each copy of the Combined Work that
the Library is used in it and that the Library and its use are
covered by this License.

b) Accompany the Combined Work with a copy of the GNU GPL and this license
document.

c) For a Combined Work that displays copyright notices during
execution, include the copyright notice for the Library among
these notices, as well as a reference directing the user to the
copies of the GNU GPL and this license document.

d) Do one of the following:

0) Convey the Minimal Corresponding Source under the terms of this
License, and the Corresponding Application Code in a form
suitable for, and under terms that permit, the user to
recombine or relink the Application with a modified version of
the Linked Version to produce a modified Combined Work, in the
manner specified by section 6 of the GNU GPL for conveying
Corresponding Source.

1) Use a suitable shared library mechanism for linking with the
Library. A suitable mechanism is one that (a) uses at run time
a copy of the Library already present on the user's computer
system, and (b) will operate properly with a modified version
of the Library that is interface-compatible with the Linked
Version.

e) Provide Installation Information, but only if you would otherwise
be required to provide such information under section 6 of the
GNU GPL, and only to the extent that such information is

```
   necessary to install and execute a modified version of the
   Combined Work produced by recombining or relinking the
   Application with a modified version of the Linked Version. (If
   you use option 4d0, the Installation Information must accompany
   the Minimal Corresponding Source and Corresponding Application
   Code. If you use option 4d1, you must provide the Installation
   Information in the manner specified by section 6 of the GNU GPL
   for conveying Corresponding Source.)

  5. Combined Libraries.

  You may place library facilities that are a work based on the
Library side by side in a single library together with other library
facilities that are not Applications and are not covered by this
License, and convey such a combined library under terms of your
choice, if you do both of the following:

   a) Accompany the combined library with a copy of the same work based
   on the Library, uncombined with any other library facilities,
   conveyed under the terms of this License.

   b) Give prominent notice with the combined library that part of it
   is a work based on the Library, and explaining where to find the
   accompanying uncombined form of the same work.

  6. Revised Versions of the GNU Lesser General Public License.

  The Free Software Foundation may publish revised and/or new versions
of the GNU Lesser General Public License from time to time. Such new
versions will be similar in spirit to the present version, but may
differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the
Library as you received it specifies that a certain numbered version
of the GNU Lesser General Public License "or any later version"
applies to it, you have the option of following the terms and
conditions either of that published version or of any later version
published by the Free Software Foundation. If the Library as you
received it does not specify a version number of the GNU Lesser
General Public License, you may choose any version of the GNU Lesser
General Public License ever published by the Free Software Foundation.

  If the Library as you received it specifies that a proxy can decide
whether future versions of the GNU Lesser General Public License shall
apply, that proxy's public statement of acceptance of any version is
permanent authorization for you to choose that version for the
Library.
----------------------------------------------------------------------
ntp/sntp/libopts/COPYING.gplv3
----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble
```

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works. By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users. We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors. You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights. Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received. You must make sure that they, too, receive
or can get the source code. And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software. For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so. This is fundamentally incompatible with the aim of
protecting users' freedom to change the software. The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable. Therefore, we
have designed this version of the GPL to prohibit the practice for those
products. If such problems arise substantially in other domains, we
stand ready to extend this provision to those domains in future versions
of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents.
States should not allow patents to restrict development and use of
software on general-purpose computers, but in those that do, we wish to
avoid the special danger that patents applied to a free program could
make it effectively proprietary. To prevent this, the GPL assures that
patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and

modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an

implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

  The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

  The Corresponding Source for a work in source code form is that same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not convey, without conditions so long as your license otherwise remains in force. You may convey covered works to others for the sole purpose of having them make modifications exclusively for you, or provide you with facilities for running those works, provided that you comply with the terms of this License in conveying all material for which you do not control copyright. Those thus making or running the covered works for you must do so exclusively on your behalf, under your direction and control, on terms that prohibit them from making any copies of your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user

actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

  If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is

reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

9. Acceptance Not Required for Having Copies.

You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

10. Automatic Licensing of Downstream Recipients.

Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

11. Patents.

A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a

consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

13. Use with the GNU Affero General Public License.

Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

14. Revised Versions of this License.

The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) by Bruce Korb - all rights reserved

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program> Copyright (C) by Bruce Korb - all rights reserved
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

```
The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
--------------------------------------------------------------------
ntp/sntp/libopts/COPYING.mbsd
--------------------------------------------------------------------
Copyright (C) 1992-2015 by Bruce Korb - all rights reserved
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are met:

    1. Redistributions of source code must retain the above copyright
       notice, this list of conditions and the following disclaimer.

    2. Redistributions in binary form must reproduce the above
       copyright notice, this list of conditions and the following
       disclaimer in the documentation and/or other materials provided
       with the distribution.

    3. The name of the author may not be used to endorse or promote
       products derived from this software without specific prior
       written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING
IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
--------------------------------------------------------------------
ntp/sntp/include/copyright.def
--------------------------------------------------------------------
/* -*- Mode: Text -*- */

copyright = {
    date  = "1992-2017";
    owner = "The University of Delaware and Network Time Foundation";
    eaddr = "http://bugs.ntp.org, bugs@ntp.org";
    type  = ntp;
};

long-opts;
```

```
config-header  = config.h;
environrc;
no-misuse-usage;
version-proc = ntpOptionPrintVersion;

version         = `
eval VERSION=\`sed -e 's/.*,\\[//' -e 's/\\].*//' < ../sntp/m4/version.m4\`
[ -z "${VERSION}" ] && echo "Cannot determine VERSION" && kill -TERM $AG_pid
echo $VERSION`;

version-value = '';     /* Don't use -v as a shortcut for --version */

/*
 * HMS: man pages already have this, and texi pages can use the
 * values in sntp/include/version.texi .
 */
// doc-sub = {
//     sub-name = version;
//     sub-text = 's/#VERSION#/<<version>>/g';
// };
```

---

ntp/sntp/libevent/LICENSE

```
Libevent is available for use under the following license, commonly known
as the 3-clause (or "modified") BSD license:

==============================
Copyright (c) 2000-2007 Niels Provos <provos@citi.umich.edu>
Copyright (c) 2007-2012 Niels Provos and Nick Mathewson

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote products
   derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
==============================

Portions of Libevent are based on works by others, also made available by
them under the three-clause BSD license above.  The copyright notices are
available in the corresponding source files; the license is as above.  Here's
a list:

log.c:
```

```
   Copyright (c) 2000 Dug Song <dugsong@monkey.org>
   Copyright (c) 1993 The Regents of the University of California.

strlcpy.c:
   Copyright (c) 1998 Todd C. Miller <Todd.Miller@courtesan.com>

win32select.c:
   Copyright (c) 2003 Michael A. Davis <mike@datanerds.net>

evport.c:
   Copyright (c) 2007 Sun Microsystems

ht-internal.h:
   Copyright (c) 2002 Christopher Clark

minheap-internal.h:
   Copyright (c) 2006 Maxim Yegorushkin <maxim.yegorushkin@gmail.com>

==============================

The arc4module is available under the following, sometimes called the
"OpenBSD" license:

   Copyright (c) 1996, David Mazieres <dm@uun.org>
   Copyright (c) 2008, Damien Miller <djm@openbsd.org>

   Permission to use, copy, modify, and distribute this software for any
   purpose with or without fee is hereby granted, provided that the above
   copyright notice and this permission notice appear in all copies.

   THE SOFTWARE IS PROVIDED "AS IS" AND THE AUTHOR DISCLAIMS ALL WARRANTIES
   WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES OF
   MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR
   ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
   WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN
   ACTION OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF
   OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

==============================

The Windows timer code is based on code from libutp, which is
distributed under this license, sometimes called the "MIT" license.


Copyright (c) 2010 BitTorrent, Inc.

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
```

```
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.
----------------------------------------------------------------------
ntp/html/copyright.html
----------------------------------------------------------------------
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">
<html>
<head>
<meta http-equiv="content-type" content="text/html;charset=iso-8859-1">
<title>Copyright Notice</title>
<!-- Changed by: Harlan Stenn, 10-Mar-2014 -->
<link href="scripts/style.css" type="text/css" rel="stylesheet">
</head>
<body>
<h3>Copyright Notice</h3>
<img src="pic/sheepb.jpg" alt="jpg" align="left"> "Clone me," says Dolly sheepishly.
<p>Last update:
  <!-- #BeginDate format:En2m -->2-Jan-2017  11:58<!-- #EndDate -->
    UTC</p>
<br clear="left">
</p>
<hr>
<p>The following copyright notice applies to all files collectively called the Network Time Protocol Version 4
<pre>
********************************************************************
*                                                                  *
* Copyright (c) University of Delaware 1992-2015                   *
*                                                                  *
* Permission to use, copy, modify, and distribute this software and   *
* its documentation for any purpose with or without fee is hereby     *
* granted, provided that the above copyright notice appears in all    *
* copies and that both the copyright notice and this permission       *
* notice appear in supporting documentation, and that the name        *
* University of Delaware not be used in advertising or publicity      *
* pertaining to distribution of the software without specific,        *
* written prior permission. The University of Delaware makes no       *
* representations about the suitability this software for any         *
* purpose. It is provided &amp;quot;as is&amp;quot; without express or implied         *
* warranty.                                                        *
*                                                                  *
********************************************************************
</pre>
<p>Content starting in 2011 from Harlan Stenn, Danny Mayer, and Martin Burnicki is:</p>
<pre>
********************************************************************
*                                                                  *
* Copyright (c) Network Time Foundation 2011-2017                  *
*                                                                  *
* All Rights Reserved                                              *
*                                                                  *
* Redistribution and use in source and binary forms, with or without  *
* modification, are permitted provided that the following conditions  *
* are met:                                                         *
* 1. Redistributions of source code must retain the above copyright   *
*    notice, this list of conditions and the following disclaimer.    *
* 2. Redistributions in binary form must reproduce the above          *
*    copyright notice, this list of conditions and the following      *
```

```
*    disclaimer in the documentation and/or other materials provided  *
*    with the distribution.                                           *
*                                                                     *
* THIS SOFTWARE IS PROVIDED BY THE AUTHORS ``AS IS'' AND ANY EXPRESS  *
* OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED   *
* WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE  *
* ARE DISCLAIMED. IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE    *
* LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR *
* CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT   *
* OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR  *
* BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF          *
* LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT           *
* (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE   *
* USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH    *
* DAMAGE.                                                             *
***********************************************************************
</pre>
<p>The following individuals contributed in part to the Network Time Protocol Distribution Version 4 a
<ol>
  <li><a href="mailto:%20takao_abe@xurb.jp">Takao Abe &lt;takao_abe@xurb.jp&gt;</a> Clock driver for J
  <li><a href="mailto:%20mark_andrews@isc.org">Mark Andrews &lt;mark_andrews@isc.org&gt;</a> Leitch at
  <li><a href="mailto:%20altmeier@atlsoft.de">Bernd Altmeier &lt;altmeier@atlsoft.de&gt;</a> hopf Elek
  <li><a href="mailto:%20vbais@mailman1.intel.co">Viraj Bais &lt;vbais@mailman1.intel.com&gt;</a> and
  <li><a href="mailto:%20michael.barone@lmco.com">Michael Barone &lt;michael,barone@lmco.com&gt;</a> G
  <li><a href="mailto:%20karl@owl.HQ.ileaf.com">Karl Berry &lt;karl@owl.HQ.ileaf.com&gt;</a> syslog to
  <li><a href="mailto:%20greg.brackley@bigfoot.com">Greg Brackley &lt;greg.brackley@bigfoot.com&gt;</a
  <li><a href="mailto:%20Marc.Brett@westgeo.com">Marc Brett &lt;Marc.Brett@westgeo.com&gt;</a> Magnavo
  <li><a href="mailto:%20Piete.Brooks@cl.cam.ac.uk">Piete Brooks &lt;Piete.Brooks@cl.cam.ac.uk&gt;</a>
  <li><a href="mailto:%20nelson@bolyard.me">Nelson B Bolyard &lt;nelson@bolyard.me&gt;</a> update and
  <li><a href="mailto:%20Jean-Francois.Boudreault@viagenie.qc.ca">Jean-Francois Boudreault &lt;Jean-Fr
  <li><a href="mailto:%20reg@dwf.com">Reg Clemens &lt;reg@dwf.com&gt;</a> Oncore driver (Current maint
  <li><a href="mailto:%20clift@ml.csiro.au">Steve Clift &lt;clift@ml.csiro.au&gt;</a> OMEGA clock driv
  <li><a href="mailto:%20casey@csc.co.za">Casey Crellin &lt;casey@csc.co.za&gt;</a> vxWorks (Tornado)
  <li><a href="mailto:%20Sven_Dietrich@trimble.COM">Sven Dietrich &lt;sven_dietrich@trimble.com&gt;</a
  <li><a href="mailto:%20dundas@salt.jpl.nasa.gov">John A. Dundas III &lt;dundas@salt.jpl.nasa.gov&gt;
  <li><a href="mailto:%20duwe@immd4.informatik.uni-erlangen.de">Torsten Duwe &lt;duwe@immd4.informatik
  <li><a href="mailto:%20dennis@mrbill.canet.ca">Dennis Ferguson &lt;dennis@mrbill.canet.ca&gt;</a> fo
  <li><a href="mailto:%20jhay@icomtek.csir.co.za">John Hay &lt;jhay@icomtek.csir.co.za&gt;</a> IPv6 su
  <li><a href="mailto:%20davehart@davehart.com">Dave Hart &lt;davehart@davehart.com&gt;</a> General ma
  <li><a href="mailto:%20neoclock4x@linum.com">Claas Hilbrecht &lt;neoclock4x@linum.com&gt;</a> NeoClo
  <li><a href="mailto:%20glenn@herald.usask.ca">Glenn Hollinger &lt;glenn@herald.usask.ca&gt;</a> GOES
  <li><a href="mailto:%20iglesias@uci.edu">Mike Iglesias &lt;iglesias@uci.edu&gt;</a> DEC Alpha port</
  <li><a href="mailto:%20jagubox.gsfc.nasa.gov">Jim Jagielski &lt;jim@jagubox.gsfc.nasa.gov&gt;</a> A/
  <li><a href="mailto:%20jbj@chatham.usdesign.com">Jeff Johnson &lt;jbj@chatham.usdesign.com&gt;</a> m
  <li><a href="mailto:%20Hans.Lambermont@nl.origin-it.com">Hans Lambermont &lt;Hans.Lambermont@nl.orig
  <li><a href="mailto:%20phk@FreeBSD.ORG">Poul-Henning Kamp &lt;phk@FreeBSD.ORG&gt;</a> Oncore driver
  <li><a href="http://www4.informatik.uni-erlangen.de/%7ekardel">Frank Kardel</a> <a href="mailto:%20k
  <li><a href="mailto:kuehn@ntp.org">Johannes Maximilian Kuehn &lt;kuehn@ntp.org&gt;</a> Rewrote <tt>s
  <li><a href="mailto:%20jones@hermes.chpc.utexas.edu">William L. Jones &lt;jones@hermes.chpc.utexas.e
  <li><a href="mailto:%20dkatz@cisco.com">Dave Katz &lt;dkatz@cisco.com&gt;</a> RS/6000 AIX port</li>
  <li><a href="mailto:%20leres@ee.lbl.gov">Craig Leres &lt;leres@ee.lbl.gov&gt;</a> 4.4BSD port, ppscl
  <li><a href="mailto:%20lindholm@ucs.ubc.ca">George Lindholm &lt;lindholm@ucs.ubc.ca&gt;</a> SunOS 5.
  <li><a href="mailto:%20louie@ni.umd.edu">Louis A. Mamakos &lt;louie@ni.umd.edu&gt;</a> MD5-based aut
  <li><a href="mailto:%20thorinn@diku.dk">Lars H. Mathiesen &lt;thorinn@diku.dk&gt;</a> adaptation of
  <li><a href="mailto:%20mayer@ntp.org">Danny Mayer &lt;mayer@ntp.org&gt;</a>Network I/O, Windows Port
  <li><a href="mailto:%20mills@udel.edu">David L. Mills &lt;mills@udel.edu&gt;</a> Version 4 foundatio
  <li><a href="mailto:%20moeller@gwdgv1.dnet.gwdg.de">Wolfgang Moeller &lt;moeller@gwdgv1.dnet.gwdg.de
  <li><a href="mailto:%20mogul@pa.dec.com">Jeffrey Mogul &lt;mogul@pa.dec.com&gt;</a> ntptrace utility
  <li><a href="mailto:%20tmoore@fievel.daytonoh.ncr.com">Tom Moore &lt;tmoore@fievel.daytonoh.ncr.com&
```

```
  <li><a href="mailto:%20kamal@whence.com">Kamal A Mostafa &lt;kamal@whence.com&gt;</a> SCO OpenServer port</li
  <li><a href="mailto:%20derek@toybox.demon.co.uk">Derek Mulcahy &lt;derek@toybox.demon.co.uk&gt;</a> and <a hr
  <li><a href="mailto:%20neal@ntp.org">Rob Neal &lt;neal@ntp.org&gt;</a> Bancomm refclock and config/parse code
  <li><a href="mailto:%20Rainer.Pruy@informatik.uni-erlangen.de">Rainer Pruy &lt;Rainer.Pruy@informatik.uni-erl
  <li><a href="mailto:%20dirce@zk3.dec.com">Dirce Richards &lt;dirce@zk3.dec.com&gt;</a> Digital UNIX V4.0 port
  <li><a href="mailto:%20wsanchez@apple.com">Wilfredo S&aacute;nchez &lt;wsanchez@apple.com&gt;</a> added suppo
  <li><a href="mailto:%20mrapple@quack.kfu.com">Nick Sayer &lt;mrapple@quack.kfu.com&gt;</a> SunOS streams modu
  <li><a href="mailto:%20jack@innovativeinternet.com">Jack Sasportas &lt;jack@innovativeinternet.com&gt;</a> Sa
  <li><a href="mailto:%20schnitz@unipress.com">Ray Schnitzler &lt;schnitz@unipress.com&gt;</a> Unixware1 port</
  <li><a href="mailto:%20shields@tembel.org">Michael Shields &lt;shields@tembel.org&gt;</a> USNO clock driver</
  <li><a href="mailto:%20pebbles.jpl.nasa.gov">Jeff Steinman &lt;jss@pebbles.jpl.nasa.gov&gt;</a> Datum PTS clo
  <li><a href="mailto:%20harlan@pfcs.com">Harlan Stenn &lt;harlan@pfcs.com&gt;</a> GNU automake/autoconfigure m
  <li><a href="mailto:%20ken@sdd.hp.com">Kenneth Stone &lt;ken@sdd.hp.com&gt;</a> HP-UX port</li>
  <li><a href="mailto:%20ajit@ee.udel.edu">Ajit Thyagarajan &lt;ajit@ee.udel.edu&gt;</a>IP multicast/anycast su
  <li><a href="mailto:%20tsuruoka@nc.fukuoka-u.ac.jp">Tomoaki TSURUOKA &lt;tsuruoka@nc.fukuoka-u.ac.jp&gt;</a>T
  <li><a href="mailto:%20brian.utterback@oracle.com">Brian Utterback &lt;brian.utterback@oracle.com&gt;</a> Ger
  <li><a href="mailto:%20loganaden@gmail.com">Loganaden Velvindron &lt;loganaden@gmail.com&gt;</a> Sandboxing (
  <li><a href="mailto:%20vixie@vix.com">Paul A Vixie &lt;vixie@vix.com&gt;</a> TrueTime GPS driver, generic Tru
  <li><a href="mailto:%20Ulrich.Windl@rz.uni-regensburg.de">Ulrich Windl &lt;Ulrich.Windl@rz.uni-regensburg.de&
</ol>
<hr>
</body>
</html>
--------------------------------------------------------------------
ntp/libjsmn/LICENSE
--------------------------------------------------------------------
Copyright (c) 2010 Serge A. Zaitsev

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL THE
AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER
LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM,
OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN
THE SOFTWARE.
```

3.70 openipmi

```
openipmi
-----------------------------------------------------------------
openipmi/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
     59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable
source code, which must be distributed under the terms of Sections
1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three
years, to give any third party, for a charge no more than your
cost of physically performing source distribution, a complete
machine-readable copy of the corresponding source code, to be
distributed under the terms of Sections 1 and 2 above on a medium
customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer
to distribute corresponding source code. (This alternative is
allowed only for noncommercial distribution and only if you
received the program in object code or executable form with such
an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA  02111-1307  USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year  name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
----------------------------------------------------------------------
```

```
openipmi/COPYING.LIB
--------------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library.  Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
```

author's reputation will not be affected by problems that might be introduced by others.
^L
  Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that any patent license obtained for a version of the library must be consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the ordinary GNU General Public License. This license, the GNU Lesser General Public License, applies to certain designated libraries, and is quite different from the ordinary General Public License. We use this license for certain libraries in order to permit linking those libraries into non-free programs.

  When a program is linked with a library, whether statically or using a shared library, the combination of the two is legally speaking a combined work, a derivative of the original library. The ordinary General Public License therefore permits such linking only if the entire combination fits its criteria of freedom. The Lesser General Public License permits more lax criteria for linking other code with the library.

  We call this license the "Lesser" General Public License because it does Less to protect the user's freedom than the ordinary General Public License. It also provides other free software developers Less of an advantage over competing non-free programs. These disadvantages are the reason we use the ordinary General Public License for many libraries. However, the Lesser license provides advantages in certain special circumstances.

  For example, on rare occasions, there may be a special need to encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be allowed to use the library. A more frequent case is that a free library does the same job as widely used non-free libraries. In this case, there is little to gain by limiting the free library to free software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free programs enables a greater number of people to use a large body of free software. For example, permission to use the GNU C Library in non-free programs enables many more people to use the whole GNU operating system, as well as its variant, the GNU/Linux operating system.

  Although the Lesser General Public License is Less protective of the users' freedom, it does ensure that the user of a program that is linked with the Library has the freedom and the wherewithal to run that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, whereas the latter must be combined with the library in order to run.

^L
GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation
and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.
^L
  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany

it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.
^L
6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under

Sections 1 and 2 above); and, if the work is an executable linked
with the Library, with the complete machine-readable "work that
uses the Library", as object code and/or source code, so that the
user can modify the Library and then relink to produce a modified
executable containing the modified Library. (It is understood
that the user who changes the contents of definitions files in the
Library will not necessarily be able to recompile the application
to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the
Library. A suitable mechanism is one that (1) uses at run time a
copy of the library already present on the user's computer system,
rather than copying library functions into the executable, and (2)
will operate properly with a modified version of the library, if
the user installs one, as long as the modified version is
interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

e) Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.
^L
7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities. This must be distributed under the terms of the
Sections above.

b) Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License. Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License. However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Library or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.
^L
  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all. For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply, and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in

certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.
^L
  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS
^L
How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting

```
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

  To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.


    <one line to give the library's name and a brief idea of what it
does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307  USA

Also add information on how to contact you by electronic and paper
mail.

You should also get your employer (if you work as a programmer) or
your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James
Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


------------------------------------------------------------------
openipmi/COPYING.BSD
------------------------------------------------------------------
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions are
met:

   1. Redistributions of source code must retain the above copyright
      notice, this list of conditions and the following disclaimer.
   2. Redistributions in binary form must reproduce the above
      copyright notice, this list of conditions and the following
      disclaimer in the documentation and/or other materials provided
      with the distribution.
```

3. The name of the author may not be used to endorse or promote
products derived from this software without
specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE
DISCLAIMED. IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT,
INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES
(INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR
SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING
IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.
---
openipmi/lib/manfid.h

Copyright (c) 2003 Sun Microsystems, Inc. All Rights Reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

Redistribution of source code must retain the above copyright
notice, this list of conditions and the following disclaimer.

Redistribution in binary form must reproduce the above copyright
notice, this list of conditions and the following disclaimer in the
documentation and/or other materials provided with the distribution.

Neither the name of Sun Microsystems, Inc. or the names of
contributors may be used to endorse or promote products derived
from this software without specific prior written permission.

This software is provided "AS IS," without a warranty of any kind.
ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES,
INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A
PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE HEREBY EXCLUDED.
SUN MICROSYSTEMS, INC. ("SUN") AND ITS LICENSORS SHALL NOT BE LIABLE
FOR ANY DAMAGES SUFFERED BY LICENSEE AS A RESULT OF USING, MODIFYING
OR DISTRIBUTING THIS SOFTWARE OR ITS DERIVATIVES. IN NO EVENT WILL
SUN OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT OR DATA,
OR FOR DIRECT, INDIRECT, SPECIAL, CONSEQUENTIAL, INCIDENTAL OR
PUNITIVE DAMAGES, HOWEVER CAUSED AND REGARDLESS OF THE THEORY OF
LIABILITY, ARISING OUT OF THE USE OF OR INABILITY TO USE THIS SOFTWARE,
EVEN IF SUN HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

You acknowledge that this software is not designed or intended for use
in the design, construction, operation or maintenance of any nuclear
facility.

3.71 openssh

```
openssh
----------------------------------------------------------------------
openssh/LICENCE
----------------------------------------------------------------------
This file is part of the OpenSSH software.

The licences which components of this software fall under are as
follows.  First, we will summarize and say that all components
are under a BSD licence, or a licence more free than that.

OpenSSH contains no GPL code.

1)
     * Copyright (c) 1995 Tatu Ylonen <ylo@cs.hut.fi>, Espoo, Finland
     *                    All rights reserved
     *
     * As far as I am concerned, the code I have written for this software
     * can be used freely for any purpose.  Any derived versions of this
     * software must be clearly marked as such, and if the derived work is
     * incompatible with the protocol description in the RFC file, it must be
     * called by a name other than "ssh" or "Secure Shell".

    [Tatu continues]
     *  However, I am not implying to give any licenses to any patents or
     * copyrights held by third parties, and the software includes parts that
     * are not under my direct control.  As far as I know, all included
     * source code is used in accordance with the relevant license agreements
     * and can be used freely for any purpose (the GNU license being the most
     * restrictive); see below for details.

    [However, none of that term is relevant at this point in time.  All of
    these restrictively licenced software components which he talks about
    have been removed from OpenSSH, i.e.,

     - RSA is no longer included, found in the OpenSSL library
     - IDEA is no longer included, its use is deprecated
     - DES is now external, in the OpenSSL library
     - GMP is no longer used, and instead we call BN code from OpenSSL
     - Zlib is now external, in a library
     - The make-ssh-known-hosts script is no longer included
     - TSS has been removed
     - MD5 is now external, in the OpenSSL library
     - RC4 support has been replaced with ARC4 support from OpenSSL
     - Blowfish is now external, in the OpenSSL library

    [The licence continues]

    Note that any information and cryptographic algorithms used in this
    software are publicly available on the Internet and at any major
    bookstore, scientific library, and patent office worldwide.  More
    information can be found e.g. at "http://www.cs.hut.fi/crypto".

    The legal status of this program is some combination of all these
    permissions and restrictions.  Use only at your own responsibility.
    You will be responsible for any legal consequences yourself; I am not
```

making any claims whether possessing or using this is legal or not in
your country, and I am not taking any responsibility on your behalf.

NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

3)
ssh-keyscan was contributed by David Mazieres under a BSD-style
license.

```
 * Copyright 1995, 1996 by David Mazieres <dm@lcs.mit.edu>.
 *
 * Modification and redistribution in source and binary forms is
 * permitted provided that due credit is given to the author and the
 * OpenBSD project by leaving this copyright notice intact.
```

4)
The Rijndael implementation by Vincent Rijmen, Antoon Bosselaers
and Paulo Barreto is in the public domain and distributed
with the following license:

```
 * @version 3.0 (December 2000)
 *
 * Optimised ANSI C code for the Rijndael cipher (now AES)
 *
 * @author Vincent Rijmen <vincent.rijmen@esat.kuleuven.ac.be>
 * @author Antoon Bosselaers <antoon.bosselaers@esat.kuleuven.ac.be>
 * @author Paulo Barreto <paulo.barreto@terra.com.br>
 *
 * This code is hereby placed in the public domain.
 *
 * THIS SOFTWARE IS PROVIDED BY THE AUTHORS ''AS IS'' AND ANY EXPRESS
 * OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
 * WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHORS OR CONTRIBUTORS BE
 * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
 * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF
 * SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
 * BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
```

```
 * WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE
 * OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE,
 * EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

5)
    One component of the ssh source code is under a 3-clause BSD license,
    held by the University of California, since we pulled these parts from
    original Berkeley code.

 * Copyright (c) 1983, 1990, 1992, 1993, 1995
 *      The Regents of the University of California.  All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. Neither the name of the University nor the names of its contributors
 *    may be used to endorse or promote products derived from this software
 *    without specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.

6)
    Remaining components of the software are provided under a standard
    2-term BSD licence with the following names as copyright holders:

        Markus Friedl
        Theo de Raadt
        Niels Provos
        Dug Song
        Aaron Campbell
        Damien Miller
        Kevin Steves
        Daniel Kouril
        Wesley Griffin
        Per Allansson
        Nils Nordman
        Simon Wilkinson

    Portable OpenSSH additionally includes code from the following copyright
    holders, also under the 2-term BSD license:

        Ben Lindstrom
        Tim Rice
        Andre Lucas
```

```
        Chris Adams
        Corinna Vinschen
        Cray Inc.
        Denis Parker
        Gert Doering
        Jakob Schlyter
        Jason Downs
        Juha ??Yrjl
        Michael Stone
        Networks Associates Technology, Inc.
        Solar Designer
        Todd C. Miller
        Wayne Schroeder
        William Jones
        Darren Tucker
        Sun Microsystems
        The SCO Group
        Daniel Walsh
        Red Hat, Inc
        Simon Vallet / Genoscope

     * Redistribution and use in source and binary forms, with or without
     * modification, are permitted provided that the following conditions
     * are met:
     * 1. Redistributions of source code must retain the above copyright
     *    notice, this list of conditions and the following disclaimer.
     * 2. Redistributions in binary form must reproduce the above copyright
     *    notice, this list of conditions and the following disclaimer in the
     *    documentation and/or other materials provided with the distribution.
     *
     * THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS OR
     * IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
     * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED.
     * IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY DIRECT, INDIRECT,
     * INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
     * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
     * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
     * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
     * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF
     * THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

8) Portable OpenSSH contains the following additional licenses:

    a) md5crypt.c, md5crypt.h

         * "THE BEER-WARE LICENSE" (Revision 42):
         * <phk@login.dknet.dk> wrote this file.  As long as you retain this
         * notice you can do whatever you want with this stuff. If we meet
         * some day, and you think this stuff is worth it, you can buy me a
         * beer in return.   Poul-Henning Kamp

    b) snprintf replacement

        * Copyright Patrick Powell 1995
        * This code is based on code written by Patrick Powell
        * (papowell@astart.com) It may be used for any purpose as long as this
        * notice remains intact on all source code distributions

    c) Compatibility code (openbsd-compat)
```

```
Apart from the previously mentioned licenses, various pieces of code
in the openbsd-compat/ subdirectory are licensed as follows:

Some code is licensed under a 3-term BSD license, to the following
copyright holders:

 Todd C. Miller
 Theo de Raadt
 Damien Miller
 Eric P. Allman
 The Regents of the University of California
 Constantin S. Svintsoff

 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. Neither the name of the University nor the names of its contributors
 *    may be used to endorse or promote products derived from this software
 *    without specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.

Some code is licensed under an ISC-style license, to the following
copyright holders:

 Internet Software Consortium.
 Todd C. Miller
 Reyk Floeter
 Chad Mynhier

 * Permission to use, copy, modify, and distribute this software for any
 * purpose with or without fee is hereby granted, provided that the above
 * copyright notice and this permission notice appear in all copies.
 *
 * THE SOFTWARE IS PROVIDED "AS IS" AND TODD C. MILLER DISCLAIMS ALL
 * WARRANTIES WITH REGARD TO THIS SOFTWARE INCLUDING ALL IMPLIED WARRANTIES
 * OF MERCHANTABILITY AND FITNESS. IN NO EVENT SHALL TODD C. MILLER BE LIABLE
 * FOR ANY SPECIAL, DIRECT, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ANY DAMAGES
 * WHATSOEVER RESULTING FROM LOSS OF USE, DATA OR PROFITS, WHETHER IN AN ACTION
 * OF CONTRACT, NEGLIGENCE OR OTHER TORTIOUS ACTION, ARISING OUT OF OR IN
 * CONNECTION WITH THE USE OR PERFORMANCE OF THIS SOFTWARE.

Some code is licensed under a MIT-style license to the following
```

```
        copyright holders:

         Free Software Foundation, Inc.

         * Permission is hereby granted, free of charge, to any person obtaining a  *
         * copy of this software and associated documentation files (the            *
         * "Software"), to deal in the Software without restriction, including      *
         * without limitation the rights to use, copy, modify, merge, publish,      *
         * distribute, distribute with modifications, sublicense, and/or sell       *
         * copies of the Software, and to permit persons to whom the Software is    *
         * furnished to do so, subject to the following conditions:                 *
         *                                                                          *
         * The above copyright notice and this permission notice shall be included  *
         * in all copies or substantial portions of the Software.                   *
         *                                                                          *
         * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS  *
         * OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF               *
         * MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.   *
         * IN NO EVENT SHALL THE ABOVE COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM,   *
         * DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR    *
         * OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR    *
         * THE USE OR OTHER DEALINGS IN THE SOFTWARE.                               *
         *                                                                          *
         * Except as contained in this notice, the name(s) of the above copyright   *
         * holders shall not be used in advertising or otherwise to promote the     *
         * sale, use or other dealings in this Software without prior written       *
         * authorization.                                                           *
         ****************************************************************************/


------
$OpenBSD: LICENCE,v 1.20 2017/04/30 23:26:16 djm Exp $
```

3.72 openssl

```
openssl
-----------------------------------------------------------------
openssl/LICENSE
-----------------------------------------------------------------

  LICENSE ISSUES
  ==============

  The OpenSSL toolkit stays under a double license, i.e. both the conditions of
  the OpenSSL License and the original SSLeay license apply to the toolkit.
  See below for the actual license texts.

  OpenSSL License
  ---------------

/* ====================================================================
 * Copyright (c) 1998-2017 The OpenSSL Project.  All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 *
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 *
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in
 *    the documentation and/or other materials provided with the
 *    distribution.
 *
 * 3. All advertising materials mentioning features or use of this
 *    software must display the following acknowledgment:
 *    "This product includes software developed by the OpenSSL Project
 *    for use in the OpenSSL Toolkit. (http://www.openssl.org/)"
 *
 * 4. The names "OpenSSL Toolkit" and "OpenSSL Project" must not be used to
 *    endorse or promote products derived from this software without
 *    prior written permission. For written permission, please contact
 *    openssl-core@openssl.org.
 *
 * 5. Products derived from this software may not be called "OpenSSL"
 *    nor may "OpenSSL" appear in their names without prior written
 *    permission of the OpenSSL Project.
 *
 * 6. Redistributions of any form whatsoever must retain the following
 *    acknowledgment:
 *    "This product includes software developed by the OpenSSL Project
 *    for use in the OpenSSL Toolkit (http://www.openssl.org/)"
 *
 * THIS SOFTWARE IS PROVIDED BY THE OpenSSL PROJECT ``AS IS'' AND ANY
 * EXPRESSED OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
 * PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE OpenSSL PROJECT OR
 * ITS CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT
```

```
 * NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES;
 * LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT,
 * STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE)
 * ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED
 * OF THE POSSIBILITY OF SUCH DAMAGE.
 * ====================================================================
 *
 * This product includes cryptographic software written by Eric Young
 * (eay@cryptsoft.com).  This product includes software written by Tim
 * Hudson (tjh@cryptsoft.com).
 *
 */

 Original SSLeay License
 -----------------------

/* Copyright (C) 1995-1998 Eric Young (eay@cryptsoft.com)
 * All rights reserved.
 *
 * This package is an SSL implementation written
 * by Eric Young (eay@cryptsoft.com).
 * The implementation was written so as to conform with Netscapes SSL.
 *
 * This library is free for commercial and non-commercial use as long as
 * the following conditions are aheared to.  The following conditions
 * apply to all code found in this distribution, be it the RC4, RSA,
 * lhash, DES, etc., code; not just the SSL code.  The SSL documentation
 * included with this distribution is covered by the same copyright terms
 * except that the holder is Tim Hudson (tjh@cryptsoft.com).
 *
 * Copyright remains Eric Young's, and as such any Copyright notices in
 * the code are not to be removed.
 * If this package is used in a product, Eric Young should be given attribution
 * as the author of the parts of the library used.
 * This can be in the form of a textual message at program startup or
 * in documentation (online or textual) provided with the package.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. All advertising materials mentioning features or use of this software
 *    must display the following acknowledgement:
 *    "This product includes cryptographic software written by
 *     Eric Young (eay@cryptsoft.com)"
 *    The word 'cryptographic' can be left out if the rouines from the library
 *    being used are not cryptographic related :-).
 * 4. If you include any Windows specific code (or a derivative thereof) from
 *    the apps directory (application code) you must include an acknowledgement:
 *    "This product includes software written by Tim Hudson (tjh@cryptsoft.com)"
 *
 * THIS SOFTWARE IS PROVIDED BY ERIC YOUNG ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
```

```
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.
 *
 * The licence and distribution terms for any publically available version or
 * derivative of this code cannot be changed.  i.e. this code cannot simply be
 * copied and put under another distribution licence
 * [including the GNU Public Licence.]
 */

----------------------------------------------------------------------
openssl/util/copy.pl
----------------------------------------------------------------------
#! /usr/bin/env perl
# Copyright 2005-2016 The OpenSSL Project Authors. All Rights Reserved.
#
# Licensed under the OpenSSL license (the "License").  You may not use
# this file except in compliance with the License.  You can obtain a copy
# in the file LICENSE in the source distribution or at
# https://www.openssl.org/source/license.html


use Fcntl;


# copy.pl

# Perl script 'copy' comment. On Windows the built in "copy" command also
# copies timestamps: this messes up Makefile dependencies.

my $stripcr = 0;

my $arg;

foreach $arg (@ARGV) {
        if ($arg eq "-stripcr")
                {
                $stripcr = 1;
                next;
                }
        $arg =~ s|\\|/|g;       # compensate for bug/feature in cygwin glob...
        foreach (glob qq("$arg"))
                {
                push @filelist, $_;
                }
}

$fnum = @filelist;

if ($fnum <= 1)
        {
        die "Need at least two filenames";
        }
```

```
$dest = pop @filelist;

if ($fnum > 2 && ! -d $dest)
        {
        die "Destination must be a directory";
        }

foreach (@filelist)
        {
        if (-d $dest)
                {
                $dfile = $_;
                $dfile =~ s|^.*[/\\]([^/\\]*)$|$1|;
                $dfile = "$dest/$dfile";
                }
        else
                {
                $dfile = $dest;
                }
        sysopen(IN, $_, O_RDONLY|O_BINARY) || die "Can't Open $_";
        sysopen(OUT, $dfile, O_WRONLY|O_CREAT|O_TRUNC|O_BINARY)
                                        || die "Can't Open $dfile";
        while (sysread IN, $buf, 10240)
                {
                if ($stripcr)
                        {
                        $buf =~ tr/\015//d;
                        }
                syswrite(OUT, $buf, length($buf));
                }
        close(IN);
        close(OUT);
        print "Copying: $_ to $dfile\n";
        }


------------------------------------------------------------------
openssl/external/perl/Text-Template-1.46/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                          59 Temple Place - Suite 330, Boston, MA
                          02111-1307, USA.
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.
```

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of

Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.

You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author

to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 59 Temple Place - Suite 330, Boston, MA 02111-1307, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

```
    Gnomovision version 69, Copyright (C) 19yy name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Library General
Public License instead of this License.

3.73 patch

```
patch
-----------------------------------------------------------------
patch/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

```
  Later license versions may give you additional or different
permissions.  However, no additional obligations are imposed on any
author or copyright holder as a result of your choosing to follow a
later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW.  EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE.  THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU.  SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
----------------------------------------------------------------------
patch/tests/copy-rename
----------------------------------------------------------------------
# Copyright (C) 2010-2012 Free Software Foundation, Inc.
#
# Copying and distribution of this file, with or without modification,
# in any medium, are permitted without royalty provided the copyright
# notice and this notice are preserved.

# git diffs: copy and rename tests

. $srcdir/test-lib.sh

require cat
use_local_patch
use_tmpdir

# ============================================================
# Normal copy and rename patches

echo old > f

cat > copy.diff <<EOF
diff --git a/f b/g
copy from f
copy to g
```

```
index 3367afd..3e75765 100644
--- a/f
+++ b/g
@@ -1 +1 @@
-old
+new
EOF

check 'patch -p1 < copy.diff || echo "Status: $?"' <<EOF
patching file g (copied from f)
EOF

check 'cat f' <<EOF
old
EOF

check 'cat g' <<EOF
new
EOF

cat > rename.diff <<EOF
diff --git a/f b/h
rename from f
rename to h
index 3367afd..3e75765 100644
--- a/f
+++ b/h
@@ -1 +1 @@
-old
+new
EOF

check 'patch -p1 < rename.diff || echo "Status: $?"' <<EOF
patching file h (renamed from f)
EOF

ncheck 'test ! -e f'

check 'cat h' <<EOF
new
EOF

echo old > h

check 'patch -p1 < rename.diff || echo "Status: $?"' <<EOF
patching file h (already renamed from f)
EOF

ncheck 'test ! -e f'

check 'cat h' <<EOF
new
EOF

mv h f

check 'patch -p1 -R < rename.diff || echo "Status: $?"' <<EOF
patching file f (already renamed from h)
EOF
```

```
ncheck 'test ! -e h'

check 'cat f' <<EOF
old
EOF

# ------------------------------------------------------------
# Patches with no hunks

echo old > f
rm -f g h

cat > copy.diff <<EOF
diff --git a/f a/g
copy from f
copy to g
EOF

check 'patch -p1 < copy.diff || echo "Status: $?"' <<EOF
patching file g (copied from f)
EOF

check 'cat f' <<EOF
old
EOF

check 'cat g' <<EOF
old
EOF

cat > rename.diff <<EOF
diff --git a/f a/h
rename from f
rename to h
EOF

check 'patch -p1 < rename.diff || echo "Status: $?"' <<EOF
patching file h (renamed from f)
EOF

ncheck 'test ! -e f'

check 'cat h' <<EOF
old
EOF

# ------------------------------------------------------------
# Backup file tests

echo old > f
rm -f g h

check 'patch -p1 --backup < copy.diff || echo "Status: $?"' <<EOF
patching file g (copied from f)
EOF

ncheck 'test ! -e f.orig'
```

```
ncheck 'cat g.orig'

rm -f f.orig g.orig

check 'patch -p1 --backup < rename.diff || echo "Status: $?"' <<EOF
patching file h (renamed from f)
EOF

check 'cat f.orig' <<EOF
old
EOF

ncheck 'cat h.orig'
```

3.74 pciutils

```
pciutils
-----------------------------------------------------------------------
pciutils/COPYING
-----------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
```

3.75 perl

```
perl
--------------------------------------------------------------------
perl/lib/File/Copy.pm
--------------------------------------------------------------------
# File/Copy.pm. Written in 1994 by Aaron Sherman <ajs@ajs.com>. This
# source code has been placed in the public domain by the author.
# Please be kind and preserve the documentation.
#
# Additions copyright 1996 by Charles Bailey.  Permission is granted
# to distribute the revised code under the same terms as Perl itself.

package File::Copy;

use 5.006;
use strict;
use warnings; no warnings 'newline';
use File::Spec;
use Config;
# During perl build, we need File::Copy but Scalar::Util might not be built yet
# And then we need these games to avoid loading overload, as that will
# confuse miniperl during the bootstrap of perl.
my $Scalar_Util_loaded = eval q{ require Scalar::Util; require overload; 1 };
our(@ISA, @EXPORT, @EXPORT_OK, $VERSION, $Too_Big, $Syscopy_is_copy);
sub copy;
sub syscopy;
sub cp;
sub mv;

$VERSION = '2.32';

require Exporter;
@ISA = qw(Exporter);
@EXPORT = qw(copy move);
@EXPORT_OK = qw(cp mv);

$Too_Big = 1024 * 1024 * 2;

sub croak {
    require Carp;
    goto &Carp::croak;
}

sub carp {
    require Carp;
    goto &Carp::carp;
}

sub _catname {
    my($from, $to) = @_;
    if (not defined &basename) {
        require File::Basename;
        import  File::Basename 'basename';
    }

    return File::Spec->catfile($to, basename($from));
```

```
}

# _eq($from, $to) tells whether $from and $to are identical
sub _eq {
    my ($from, $to) = map {
        $Scalar_Util_loaded && Scalar::Util::blessed($_)
            && overload::Method($_, q{""})
            ? "$_"
            : $_
    } (@_);
    return '' if ( (ref $from) xor (ref $to) );
    return $from == $to if ref $from;
    return $from eq $to;
}

sub copy {
    croak("Usage: copy(FROM, TO [, BUFFERSIZE]) ")
      unless(@_ == 2 || @_ == 3);

    my $from = shift;
    my $to = shift;

    my $size;
    if (@_) {
        $size = shift(@_) + 0;
        croak("Bad buffer size for copy: $size\n") unless ($size > 0);
    }

    my $from_a_handle = (ref($from)
                         ? (ref($from) eq 'GLOB'
                            || UNIVERSAL::isa($from, 'GLOB')
                            || UNIVERSAL::isa($from, 'IO::Handle'))
                         : (ref(\$from) eq 'GLOB'));
    my $to_a_handle =   (ref($to)
                         ? (ref($to) eq 'GLOB'
                            || UNIVERSAL::isa($to, 'GLOB')
                            || UNIVERSAL::isa($to, 'IO::Handle'))
                         : (ref(\$to) eq 'GLOB'));

    if (_eq($from, $to)) { # works for references, too
        carp("'$from' and '$to' are identical (not copied)");
        return 0;
    }

    if (!$from_a_handle && !$to_a_handle && -d $to && ! -d $from) {
        $to = _catname($from, $to);
    }

    if ((($Config{d_symlink} && $Config{d_readlink}) || $Config{d_link}) &&
        !($^O eq 'MSWin32' || $^O eq 'os2')) {
        my @fs = stat($from);
        if (@fs) {
            my @ts = stat($to);
            if (@ts && $fs[0] == $ts[0] && $fs[1] == $ts[1] && !-p $from) {
                carp("'$from' and '$to' are identical (not copied)");
                return 0;
            }
        }
    }
```

```
elsif (_eq($from, $to)) {
    carp("'$from' and '$to' are identical (not copied)");
    return 0;
}

if (defined &syscopy && !$Syscopy_is_copy
    && !$to_a_handle
    && !($from_a_handle && $^O eq 'os2' )   # OS/2 cannot handle handles
    && !($from_a_handle && $^O eq 'MSWin32')
    && !($from_a_handle && $^O eq 'NetWare')
   )
{
    if ($^O eq 'VMS' && -e $from
        && ! -d $to && ! -d $from) {

        # VMS natively inherits path components from the source of a
        # copy, but we want the Unixy behavior of inheriting from
        # the current working directory.  Also, default in a trailing
        # dot for null file types.

        $to = VMS::Filespec::rmsexpand(VMS::Filespec::vmsify($to), '.');

        # Get rid of the old versions to be like UNIX
        1 while unlink $to;
    }

    return syscopy($from, $to) || 0;
}

my $closefrom = 0;
my $closeto = 0;
my ($status, $r, $buf);
local($\) = '';

my $from_h;
if ($from_a_handle) {
   $from_h = $from;
} else {
   open $from_h, "<", $from or goto fail_open1;
   binmode $from_h or die "($!,$^E)";
   $closefrom = 1;
}

# Seems most logical to do this here, in case future changes would want to
# make this croak for some reason.
unless (defined $size) {
    $size = tied(*$from_h) ? 0 : -s $from_h || 0;
    $size = 1024 if ($size < 512);
    $size = $Too_Big if ($size > $Too_Big);
}

my $to_h;
if ($to_a_handle) {
   $to_h = $to;
} else {
    $to_h = \do { local *FH }; # XXX is this line obsolete?
    open $to_h, ">", $to or goto fail_open2;
    binmode $to_h or die "($!,$^E)";
    $closeto = 1;
```

```
    }

    $! = 0;
    for (;;) {
        my ($r, $w, $t);
       defined($r = sysread($from_h, $buf, $size))
            or goto fail_inner;
        last unless $r;
        for ($w = 0; $w < $r; $w += $t) {
           $t = syswrite($to_h, $buf, $r - $w, $w)
                or goto fail_inner;
        }
    }

    close($to_h) || goto fail_open2 if $closeto;
    close($from_h) || goto fail_open1 if $closefrom;

    # Use this idiom to avoid uninitialized value warning.
    return 1;

    # All of these contortions try to preserve error messages...
  fail_inner:
    if ($closeto) {
        $status = $!;
        $! = 0;
       close $to_h;
        $! = $status unless $!;
    }
  fail_open2:
    if ($closefrom) {
        $status = $!;
        $! = 0;
       close $from_h;
        $! = $status unless $!;
    }
  fail_open1:
    return 0;
}

sub cp {
    my($from,$to) = @_;
    my(@fromstat) = stat $from;
    my(@tostat) = stat $to;
    my $perm;

    return 0 unless copy(@_) and @fromstat;

    if (@tostat) {
        $perm = $tostat[2];
    } else {
        $perm = $fromstat[2] & ~(umask || 0);
        @tostat = stat $to;
    }
    # Might be more robust to look for S_I* in Fcntl, but we're
    # trying to avoid dependence on any XS-containing modules,
    # since File::Copy is used during the Perl build.
    $perm &= 07777;
    if ($perm & 06000) {
        croak("Unable to check setuid/setgid permissions for $to: $!")
```

```
            unless @tostat;

        if ($perm & 04000 and                       # setuid
            $fromstat[4] != $tostat[4]) {           # owner must match
            $perm &= ~06000;
        }

        if ($perm & 02000 && $> != 0) {             # if not root, setgid
            my $ok = $fromstat[5] == $tostat[5];    # group must match
            if ($ok) {                              # and we must be in group
                $ok = grep { $_ == $fromstat[5] } split /\s+/, $)
            }
            $perm &= ~06000 unless $ok;
        }
    }
    return 0 unless @tostat;
    return 1 if $perm == ($tostat[2] & 07777);
    return eval { chmod $perm, $to; } ? 1 : 0;
}

sub _move {
    croak("Usage: move(FROM, TO) ") unless @_ == 3;

    my($from,$to,$fallback) = @_;

    my($fromsz,$tosz1,$tomt1,$tosz2,$tomt2,$sts,$ossts);

    if (-d $to && ! -d $from) {
        $to = _catname($from, $to);
    }

    ($tosz1,$tomt1) = (stat($to))[7,9];
    $fromsz = -s $from;
    if ($^O eq 'os2' and defined $tosz1 and defined $fromsz) {
      # will not rename with overwrite
      unlink $to;
    }

    if ($^O eq 'VMS' && -e $from
        && ! -d $to && ! -d $from) {

            # VMS natively inherits path components from the source of a
            # copy, but we want the Unixy behavior of inheriting from
            # the current working directory.  Also, default in a trailing
            # dot for null file types.

            $to = VMS::Filespec::rmsexpand(VMS::Filespec::vmsify($to), '.');

            # Get rid of the old versions to be like UNIX
            1 while unlink $to;
    }

    return 1 if rename $from, $to;

    # Did rename return an error even though it succeeded, because $to
    # is on a remote NFS file system, and NFS lost the server's ack?
    return 1 if defined($fromsz) && !-e $from &&           # $from disappeared
                ((($tosz2,$tomt2) = (stat($to))[7,9]) &&    # $to's there
                  ((!defined $tosz1) ||                     #  not before or
```

```
                ($tosz1 != $tosz2 or $tomt1 != $tomt2)) &&  #   was changed
            $tosz2 == $fromsz;                          # it's all there

    ($tosz1,$tomt1) = (stat($to))[7,9];  # just in case rename did something

    {
        local $@;
        eval {
            local $SIG{__DIE__};
            $fallback->($from,$to) or die;
            my($atime, $mtime) = (stat($from))[8,9];
            utime($atime, $mtime, $to);
            unlink($from)   or die;
        };
        return 1 unless $@;
    }
    ($sts,$ossts) = ($! + 0, $^E + 0);

    ($tosz2,$tomt2) = ((stat($to))[7,9],0,0) if defined $tomt1;
    unlink($to) if !defined($tomt1) or $tomt1 != $tomt2 or $tosz1 != $tosz2;
    ($!,$^E) = ($sts,$ossts);
    return 0;
}

sub move { _move(@_,\&copy); }
sub mv   { _move(@_,\&cp);   }

# &syscopy is an XSUB under OS/2
unless (defined &syscopy) {
    if ($^O eq 'VMS') {
        *syscopy = \&rmscopy;
    } elsif ($^O eq 'MSWin32' && defined &DynaLoader::boot_DynaLoader) {
        # Win32::CopyFile() fill only work if we can load Win32.xs
        *syscopy = sub {
            return 0 unless @_ == 2;
            return Win32::CopyFile(@_, 1);
        };
    } else {
        $Syscopy_is_copy = 1;
        *syscopy = \&copy;
    }
}

1;

__END__

=head1 NAME

File::Copy - Copy files or filehandles

=head1 SYNOPSIS

        use File::Copy;

        copy("sourcefile","destinationfile") or die "Copy failed: $!";
        copy("Copy.pm",\*STDOUT);
        move("/dev1/sourcefile","/dev2/destinationfile");
```

```
        use File::Copy "cp";

        $n = FileHandle->new("/a/file","r");
        cp($n,"x");

=head1 DESCRIPTION

The File::Copy module provides two basic functions, C<copy> and
C<move>, which are useful for getting the contents of a file from
one place to another.

=over 4

=item copy
X<copy> X<cp>

The C<copy> function takes two
parameters: a file to copy from and a file to copy to. Either
argument may be a string, a FileHandle reference or a FileHandle
glob. Obviously, if the first argument is a filehandle of some
sort, it will be read from, and if it is a file I<name> it will
be opened for reading. Likewise, the second argument will be
written to. If the second argument does not exist but the parent
directory does exist, then it will be created. Trying to copy
a file into a non-existent directory is an error.
Trying to copy a file on top of itself is also an error.
C<copy> will not overwrite read-only files.

If the destination (second argument) already exists and is a directory,
and the source (first argument) is not a filehandle, then the source
file will be copied into the directory specified by the destination,
using the same base name as the source file.  It's a failure to have a
filehandle as the source when the destination is a directory.

B<Note that passing in
files as handles instead of names may lead to loss of information
on some operating systems; it is recommended that you use file
names whenever possible.>  Files are opened in binary mode where
applicable.  To get a consistent behaviour when copying from a
filehandle to a file, use C<binmode> on the filehandle.

An optional third parameter can be used to specify the buffer
size used for copying. This is the number of bytes from the
first file, that will be held in memory at any given time, before
being written to the second file. The default buffer size depends
upon the file, but will generally be the whole file (up to 2MB), or
1k for filehandles that do not reference files (eg. sockets).

You may use the syntax C<use File::Copy "cp"> to get at the C<cp>
alias for this function. The syntax is I<exactly> the same.  The
behavior is nearly the same as well: as of version 2.15, C<cp> will
preserve the source file's permission bits like the shell utility
C<cp(1)> would do, while C<copy> uses the default permissions for the
target file (which may depend on the process' C<umask>, file
ownership, inherited ACLs, etc.).  If an error occurs in setting
permissions, C<cp> will return 0, regardless of whether the file was
successfully copied.

=item move
```

```
X<move> X<mv> X<rename>

The C<move> function also takes two parameters: the current name
and the intended name of the file to be moved.  If the destination
already exists and is a directory, and the source is not a
directory, then the source file will be renamed into the directory
specified by the destination.

If possible, move() will simply rename the file.  Otherwise, it copies
the file to the new location and deletes the original.  If an error occurs
during this copy-and-delete process, you may be left with a (possibly partial)
copy of the file under the destination name.

You may use the C<mv> alias for this function in the same way that
you may use the C<cp> alias for C<copy>.

=item syscopy
X<syscopy>

File::Copy also provides the C<syscopy> routine, which copies the
file specified in the first parameter to the file specified in the
second parameter, preserving OS-specific attributes and file
structure.  For Unix systems, this is equivalent to the simple
C<copy> routine, which doesn't preserve OS-specific attributes.  For
VMS systems, this calls the C<rmscopy> routine (see below).  For OS/2
systems, this calls the C<syscopy> XSUB directly. For Win32 systems,
this calls C<Win32::CopyFile>.

B<Special behaviour if C<syscopy> is defined (OS/2, VMS and Win32)>:

If both arguments to C<copy> are not file handles,
then C<copy> will perform a "system copy" of
the input file to a new output file, in order to preserve file
attributes, indexed file structure, I<etc.>  The buffer size
parameter is ignored.  If either argument to C<copy> is a
handle to an opened file, then data is copied using Perl
operators, and no effort is made to preserve file attributes
or record structure.

The system copy routine may also be called directly under VMS and OS/2
as C<File::Copy::syscopy> (or under VMS as C<File::Copy::rmscopy>, which
is the routine that does the actual work for syscopy).

=item rmscopy($from,$to[,$date_flag])
X<rmscopy>

The first and second arguments may be strings, typeglobs, typeglob
references, or objects inheriting from IO::Handle;
they are used in all cases to obtain the
I<filespec> of the input and output files, respectively.  The
name and type of the input file are used as defaults for the
output file, if necessary.

A new version of the output file is always created, which
inherits the structure and RMS attributes of the input file,
except for owner and protections (and possibly timestamps;
see below).  All data from the input file is copied to the
output file; if either of the first two parameters to C<rmscopy>
is a file handle, its position is unchanged.  (Note that this
```

```
means a file handle pointing to the output file will be
associated with an old version of that file after C<rmscopy>
returns, not the newly created version.)

The third parameter is an integer flag, which tells C<rmscopy>
how to handle timestamps.  If it is E<lt> 0, none of the input file's
timestamps are propagated to the output file.  If it is E<gt> 0, then
it is interpreted as a bitmask: if bit 0 (the LSB) is set, then
timestamps other than the revision date are propagated; if bit 1
is set, the revision date is propagated.  If the third parameter
to C<rmscopy> is 0, then it behaves much like the DCL COPY command:
if the name or type of the output file was explicitly specified,
then no timestamps are propagated, but if they were taken implicitly
from the input filespec, then all timestamps other than the
revision date are propagated.  If this parameter is not supplied,
it defaults to 0.

C<rmscopy> is VMS specific and cannot be exported; it must be
referenced by its full name, e.g.:

  File::Copy::rmscopy($from, $to) or die $!;

Like C<copy>, C<rmscopy> returns 1 on success.  If an error occurs,
it sets C<$!>, deletes the output file, and returns 0.

=back

=head1 RETURN

All functions return 1 on success, 0 on failure.
$! will be set if an error was encountered.

=head1 NOTES

Before calling copy() or move() on a filehandle, the caller should
close or flush() the file to avoid writes being lost. Note that this
is the case even for move(), because it may actually copy the file,
depending on the OS-specific inplementation, and the underlying
filesystem(s).

=head1 AUTHOR

File::Copy was written by Aaron Sherman I<E<lt>ajs@ajs.comE<gt>> in 1995,
and updated by Charles Bailey I<E<lt>bailey@newman.upenn.eduE<gt>> in 1996.

=cut

------------------------------------------------------------------
perl/lib/File/Copy.t
------------------------------------------------------------------
#!./perl -w

BEGIN {
   if( $ENV{PERL_CORE} ) {
        chdir 't' if -d 't';
        @INC = '../lib';
    }
}
```

```
use strict;
use warnings;

use Test::More;

my $TB = Test::More->builder;

plan tests => 466;

# We are going to override rename() later on but Perl has to see an override
# at compile time to honor it.
BEGIN { *CORE::GLOBAL::rename = sub { CORE::rename($_[0], $_[1]) }; }


use File::Copy qw(copy move cp);
use Config;


foreach my $code ("copy()", "copy('arg')", "copy('arg', 'arg', 'arg', 'arg')",
                  "move()", "move('arg')", "move('arg', 'arg', 'arg')"
                 )
{
    eval $code;
    like $@, qr/^Usage: /, "'$code' is a usage error";
}


for my $cross_partition_test (0..1) {
  {
    # Simulate a cross-partition copy/move by forcing rename to
    # fail.
    no warnings 'redefine';
    *CORE::GLOBAL::rename = sub { 0 } if $cross_partition_test;
  }

  # First we create a file
  open(F, ">", "file-$$") or die $!;
  binmode F; # for DOSISH platforms, because test 3 copies to stdout
  printf F "ok\n";
  close F;

  copy "file-$$", "copy-$$";

  open(F, "<", "copy-$$") or die $!;
  my $foo = <F>;
  close(F);

  is -s "file-$$", -s "copy-$$", 'copy(fn, fn): files of the same size';

  is $foo, "ok\n", 'copy(fn, fn): same contents';

  print("# next test checks copying to STDOUT\n");
  binmode STDOUT unless $^O eq 'VMS'; # Copy::copy works in binary mode
  # This outputs "ok" so its a test.
  copy "copy-$$", \*STDOUT;
  $TB->current_test($TB->current_test + 1);
  unlink "copy-$$" or die "unlink: $!";

  open(F, "<", "file-$$");
```

```
copy(*F, "copy-$$");
open(R, "<", "copy-$$") or die "open copy-$$: $!"; $foo = <R>; close(R);
is $foo, "ok\n", 'copy(*F, fn): same contents';
unlink "copy-$$" or die "unlink: $!";

open(F, "<", "file-$$");
copy(\*F, "copy-$$");
close(F) or die "close: $!";
open(R, "<", "copy-$$") or die; $foo = <R>; close(R) or die "close: $!";
is $foo, "ok\n", 'copy(\*F, fn): same contents';
unlink "copy-$$" or die "unlink: $!";

require IO::File;
my $fh = IO::File->new(">copy-$$") or die "Cannot open copy-$$:$!";
binmode $fh or die $!;
copy("file-$$",$fh);
$fh->close or die "close: $!";
open(R, "<", "copy-$$") or die; $foo = <R>; close(R);
is $foo, "ok\n", 'copy(fn, io): same contents';
unlink "copy-$$" or die "unlink: $!";

require FileHandle;
$fh = FileHandle->new(">copy-$$") or die "Cannot open copy-$$:$!";
binmode $fh or die $!;
copy("file-$$",$fh);
$fh->close;
open(R, "<", "copy-$$") or die $!; $foo = <R>; close(R);
is $foo, "ok\n", 'copy(fn, fh): same contents';
unlink "file-$$" or die "unlink: $!";

ok !move("file-$$", "copy-$$"), "move on missing file";
ok -e "copy-$$",                '  target still there';

# Doesn't really matter what time it is as long as its not now.
my $time = 1000000000;
utime( $time, $time, "copy-$$" );

# Recheck the mtime rather than rely on utime in case we're on a
# system where utime doesn't work or there's no mtime at all.
# The destination file will reflect the same difficulties.
my $mtime = (stat("copy-$$"))[9];

ok move("copy-$$", "file-$$"), 'move';
ok -e "file-$$",              '  destination exists';
ok !-e "copy-$$",             '  source does not';
open(R, "<", "file-$$") or die $!; $foo = <R>; close(R);
is $foo, "ok\n", 'contents preserved';

TODO: {
  local $TODO = 'mtime only preserved on ODS-5 with POSIX dates and DECC$EFS_FILE_TIMESTAMPS enabled' if $^O

  my $dest_mtime = (stat("file-$$"))[9];
  is $dest_mtime, $mtime,
    "mtime preserved by copy()".
    ($cross_partition_test ? " while testing cross-partition" : "");
}

# trick: create lib/ if not exists - not needed in Perl core
unless (-d 'lib') { mkdir 'lib' or die $!; }
```

```
copy "file-$$", "lib";
open(R, "<", "lib/file-$$") or die $!; $foo = <R>; close(R);
is $foo, "ok\n", 'copy(fn, dir): same contents';
unlink "lib/file-$$" or die "unlink: $!";

# Do it twice to ensure copying over the same file works.
copy "file-$$", "lib";
open(R, "<", "lib/file-$$") or die $!; $foo = <R>; close(R);
is $foo, "ok\n", 'copy over the same file works';
unlink "lib/file-$$" or die "unlink: $!";

{
  my $warnings = '';
  local $SIG{__WARN__} = sub { $warnings .= join '', @_ };
  ok !copy("file-$$", "file-$$"), 'copy to itself fails';

  like $warnings, qr/are identical/, 'but warns';
  ok -s "file-$$", 'contents preserved';
}

move "file-$$", "lib";
open(R, "<", "lib/file-$$") or die "open lib/file-$$: $!"; $foo = <R>; close(R);
is $foo, "ok\n", 'move(fn, dir): same contents';
ok !-e "file-$$", 'file moved indeed';
unlink "lib/file-$$" or die "unlink: $!";

SKIP: {
  skip "Testing symlinks", 3 unless $Config{d_symlink};

  open(F, ">", "file-$$") or die $!;
  print F "dummy content\n";
  close F;
  symlink("file-$$", "symlink-$$") or die $!;

  my $warnings = '';
  local $SIG{__WARN__} = sub { $warnings .= join '', @_ };
  ok !copy("file-$$", "symlink-$$"), 'copy to itself (via symlink) fails';

  like $warnings, qr/are identical/, 'emits a warning';
  ok !-z "file-$$",
    'rt.perl.org 5196: copying to itself would truncate the file';

  unlink "symlink-$$" or die $!;
  unlink "file-$$" or die $!;
}

SKIP: {
  skip "Testing hard links", 3
       if !$Config{d_link} or $^O eq 'MSWin32' or $^O eq 'cygwin';

  open(F, ">", "file-$$") or die $!;
  print F "dummy content\n";
  close F;
  link("file-$$", "hardlink-$$") or die $!;

  my $warnings = '';
  local $SIG{__WARN__} = sub { $warnings .= join '', @_ };
  ok !copy("file-$$", "hardlink-$$"), 'copy to itself (via hardlink) fails';
```

```
    like $warnings, qr/are identical/, 'emits a warning';
    ok ! -z "file-$$",
      'rt.perl.org 5196: copying to itself would truncate the file';

    unlink "hardlink-$$" or die $!;
    unlink "file-$$" or die $!;
  }

  open(F, ">", "file-$$") or die $!;
  binmode F;
  print F "this is file\n";
  close F;

  my $copy_msg = "this is copy\n";
  open(F, ">", "copy-$$") or die $!;
  binmode F;
  print F $copy_msg;
  close F;

  my @warnings;
  local $SIG{__WARN__} = sub { push @warnings, join '', @_ };

  # pie-$$ so that we force a non-constant, else the numeric conversion (of 0)
  # is cached and we do not get a warning the second time round
  is eval { copy("file-$$", "copy-$$", "pie-$$"); 1 }, undef,
    "a bad buffer size fails to copy";
  like $@, qr/Bad buffer size for copy/, "with a helpful error message";
  unless (is scalar @warnings, 1, "There is 1 warning") {
    diag $_ foreach @warnings;
  }

  is -s "copy-$$", length $copy_msg, "but does not truncate the destination";
  open(F, "<", "copy-$$") or die $!;
  $foo = <F>;
  close(F);
  is $foo, $copy_msg, "nor change the destination's contents";

  unlink "file-$$" or die $!;
  unlink "copy-$$" or die $!;

  # RT #73714 copy to file with leading whitespace failed

  TODO: {
  local $TODO = 'spaces in filenames require DECC$EFS_CHARSET enabled' if $^O eq 'VMS';
  open(F, ">", "file-$$") or die $!;
  close F;
  copy "file-$$", " copy-$$";
  ok -e " copy-$$", "copy with leading whitespace";
  unlink "file-$$" or die "unlink: $!";
  unlink " copy-$$" or die "unlink: $!";
  }
}

my $can_suidp = sub {
    my $dir = "suid-$$";
    my $ok = 1;
    mkdir $dir or die "Can't mkdir($dir) for suid test";
    $ok = 0 unless chmod 2000, $dir;
    rmdir $dir;
```

```
    return $ok;
};

SKIP: {
    my @tests = (
        [0000,  0777,  0777,  0777],
        [0000,  0751,  0751,  0644],
        [0022,  0777,  0755,  0206],
        [0022,  0415,  0415,  0666],
        [0077,  0777,  0700,  0333],
        [0027,  0755,  0750,  0251],
        [0777,  0751,  0000,  0215],
    );

    my $skips = @tests * 6 * 8;

    my $can_suid = $can_suidp->();
    skip "Can't suid on this $^O filesystem", $skips unless $can_suid;
    skip "-- Copy preserves RMS defaults, not POSIX permissions.", $skips
          if $^O eq 'VMS';
    skip "Copy doesn't set file permissions correctly on Win32.",  $skips
          if $^O eq "MSWin32";
    skip "Copy maps POSIX permissions to VOS permissions.", $skips
          if $^O eq "vos";
    skip "There be dragons here with DragonflyBSD.", $skips
         if $^O eq 'dragonfly';


    # Just a sub to get better failure messages.
    sub __ ($) {
        my $perm   = shift;
        my $id     = 07000 & $perm;
           $id   >>= 9;
        $perm     &= 0777;
        my @chunks = map {(qw [--- --x -w- -wx r-- r-x rw- rwx]) [$_]}
                     split // => sprintf "%03o" => $perm;
        if ($id & 4) {$chunks [0] =~ s/(.)$/$1 eq '-' ? 'S' : 's'/e;}
        if ($id & 2) {$chunks [1] =~ s/(.)$/$1 eq '-' ? 'S' : 's'/e;}
        if ($id & 1) {$chunks [2] =~ s/(.)$/$1 eq '-' ? 'T' : 't'/e;}
        join "" => @chunks;
    }
    # Testing permission bits.
    my $src   = "file-$$";
    my $copy1 = "copy1-$$";
    my $copy2 = "copy2-$$";
    my $copy3 = "copy3-$$";
    my $copy4 = "copy4-$$";
    my $copy5 = "copy5-$$";
    my $copy6 = "copy6-$$";
    my $copyd = "copyd-$$";

    open my $fh => ">", $src   or die $!;
    close   $fh                or die $!;

    open    $fh => ">", $copy3 or die $!;
    close   $fh                or die $!;

    open    $fh => ">", $copy6 or die $!;
    close   $fh                or die $!;
```

```
my $old_mask = umask;
foreach my $test (@tests) {
    foreach my $id (0 .. 7) {
        my ($umask, $s_perm, $c_perm1, $c_perm3) = @$test;
        # Make sure the copies do not exist.
        ! -e $_ or unlink $_ or die $! for $copy1, $copy2, $copy4, $copy5;

        $s_perm  |= $id << 9;
        $c_perm1 |= $id << 9;
        diag(sprintf "Src permission: %04o; umask %03o\n", $s_perm, $umask)
            unless ($ENV{PERL_CORE});

        # Test that we can actually set a file to the correct permission.
        # Slightly convoluted, because some operating systems will let us
        # set a directory, but not a file. These should all work:
        mkdir $copyd or die "Can't mkdir $copyd: $!";
        chmod $s_perm, $copyd
            or die sprintf "Can't chmod %o $copyd: $!", $s_perm;
        rmdir $copyd
            or die sprintf "Can't rmdir $copyd: $!";
        open my $fh0, '>', $copy1 or die "Can't open $copy1: $!";
        close $fh0 or die "Can't close $copy1: $!";
        unless (chmod $s_perm, $copy1) {
            $TB->skip(sprintf "Can't chmod $copy1 to %o: $!", $s_perm)
                for 1..6;
            next;
        }
        my $perm0 = (stat $copy1) [2] & 07777;
        unless ($perm0 == $s_perm) {
            $TB->skip(sprintf "chmod %o $copy1 lies - we actually get %o",
                      $s_perm, $perm0)
                for 1..6;
            next;
        }
        unlink $copy1 or die "Can't unlink $copy1: $!";

        (umask $umask) // die $!;
        chmod $s_perm  => $src   or die sprintf "$!: $src => %o", $s_perm;
        chmod $c_perm3 => $copy3 or die $!;
        chmod $c_perm3 => $copy6 or die $!;

        open my $fh => "<", $src or die $!;

        copy ($src, $copy1);
        copy ($fh,  $copy2);
        copy ($src, $copy3);
        cp   ($src, $copy4);
        cp   ($fh,  $copy5);
        cp   ($src, $copy6);

        my $permdef = 0666 & ~$umask;
        my $perm1 = (stat $copy1) [2] & 07777;
        my $perm2 = (stat $copy2) [2] & 07777;
        my $perm3 = (stat $copy3) [2] & 07777;
        my $perm4 = (stat $copy4) [2] & 07777;
        my $perm5 = (stat $copy5) [2] & 07777;
        my $perm6 = (stat $copy6) [2] & 07777;
        is (__$perm1, __$permdef, "Permission bits set correctly");
```

```
            is (__$perm2, __$permdef, "Permission bits set correctly");
            is (__$perm4, __$c_perm1, "Permission bits set correctly");
            is (__$perm5, __$c_perm1, "Permission bits set correctly");
            is (__$perm3, __$c_perm3, "Permission bits not modified");
            is (__$perm6, __$c_perm3, "Permission bits not modified");
        }
    }
    umask $old_mask or die $!;

    # Clean up.
    ! -e $_ or unlink $_ or die $! for $src, $copy1, $copy2, $copy3,
                                           $copy4, $copy5, $copy6;
}

{
    package Crash;
    # a package overloaded suspiciously like IO::Scalar
    use overload '""' => sub { ${$_[0]} };
    use overload 'bool' => sub { 1 };
    sub new {
        my ($class, $name) = @_;
        bless \$name, $class;
    }

    package Zowie;
    # a different package overloaded suspiciously like IO::Scalar
    use overload '""' => sub { ${$_[0]} };
    use overload 'bool' => sub { 1 };
    sub new {
        my ($class, $name) = @_;
        bless \$name, $class;
    }
}
{
    my $object = Crash->new('whack_eth');
    my %what = (plain => "$object",
                object1 => $object,
                object2 => Zowie->new('whack_eth'),
                object2 => Zowie->new('whack_eth'),
               );

    my @warnings;
    local $SIG{__WARN__} = sub {
        push @warnings, @_;
    };

    foreach my $left (qw(plain object1 object2)) {
        foreach my $right (qw(plain object1 object2)) {
            @warnings = ();
            $! = 0;
            is eval {copy $what{$left}, $what{$right}}, 0, "copy $left $right";
            is $@, '', 'No croaking';
            is $!, '', 'No system call errors';
            is @warnings, 1, 'Exactly 1 warning';
            like $warnings[0],
                qr/'$object' and '$object' are identical \(not copied\)/,
                    'with the text we expect';
        }
    }
```

```
}

# On Unix systems, File::Copy always returns 0 to signal failure,
# even when in list context!  On Windows, it always returns "" to signal
# failure.
#
# While returning a list containing a false value is arguably a bad
# API design, at the very least we can make sure it always returns
# the same false value.

my $NO_SUCH_FILE       = "this_file_had_better_not_exist";
my $NO_SUCH_OTHER_FILE = "my_goodness_im_sick_of_airports";

use constant EXPECTED_SCALAR => 0;
use constant EXPECTED_LIST   => [ EXPECTED_SCALAR ];

my %subs = (
    copy    =>  \&File::Copy::copy,
    cp      =>  \&File::Copy::cp,
    move    =>  \&File::Copy::move,
    mv      =>  \&File::Copy::mv,
);

SKIP: {
    skip( "Test can't run with $NO_SUCH_FILE existing", 2 * keys %subs)
        if (-e $NO_SUCH_FILE);

    foreach my $name (keys %subs) {

        my $sub = $subs{$name};

        my $scalar = $sub->( $NO_SUCH_FILE, $NO_SUCH_OTHER_FILE );
        is( $scalar, EXPECTED_SCALAR, "$name in scalar context");

        my @array  = $sub->( $NO_SUCH_FILE, $NO_SUCH_OTHER_FILE );
        is_deeply( \@array, EXPECTED_LIST, "$name in list context");
    }
}

SKIP: {
    skip("fork required to test pipe copying", 2)
        if (!$Config{'d_fork'});

    open(my $IN, "-|") || exec $^X, '-e', 'print "Hello, world!\n"';
    open(my $OUT, "|-") || exec $^X, '-ne', 'exit(/Hello/ ? 55 : 0)';

    ok(copy($IN, $OUT), "copy pipe to another");
    close($OUT);
    is($? >> 8, 55, "content copied through the pipes");
    close($IN);
}

use File::Temp qw(tempdir);
use File::Spec;

SKIP: {
    # RT #111126: File::Copy copy() zeros file when copying a file
    # into the same directory it is stored in
```

```
    my $temp_dir = tempdir( CLEANUP => 1 );
    my $temp_file = File::Spec->catfile($temp_dir, "somefile");

    open my $fh, ">", $temp_file
        or skip "Cannot create $temp_file: $!", 2;
    print $fh "Just some data";
    close $fh
        or skip "Cannot close $temp_file: $!", 2;

    my $warn_message = "";
    local $SIG{__WARN__} = sub { $warn_message .= "@_" };
    ok(!copy($temp_file, $temp_dir),
       "Copy of foo/file to foo/ should fail");
    like($warn_message, qr/^\Q'$temp_file' and '$temp_file'\E are identical.*Copy\.t/i,
         "error message should describe the problem");
    1 while unlink $temp_file;
}

{
  open(my $F, '>', "file-$$") or die $!;
  binmode $F; # for DOSISH platforms
  printf $F "ok\n";
  close $F;

  my $buffer = (1024 * 1024 * 2) + 1;
  is eval {copy "file-$$", "copy-$$", $buffer}, 1,
    "copy with buffer above normal size";
}


END {
    1 while unlink "copy-$$";
    1 while unlink "file-$$";
    1 while unlink "lib/file-$$";
}
```

---

perl/cpan/Compress-Raw-Bzip2/bzip2-src/LICENSE

```
--------------------------------------------------------------------------

This program, "bzip2", the associated library "libbzip2", and all
documentation, are copyright (C) 1996-2010 Julian R Seward.  All
rights reserved.

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

1. Redistributions of source code must retain the above copyright
   notice, this list of conditions and the following disclaimer.

2. The origin of this software must not be misrepresented; you must
   not claim that you wrote the original software.  If you use this
   software in a product, an acknowledgment in the product
   documentation would be appreciated but is not required.

3. Altered source versions must be plainly marked as such, and must
   not be misrepresented as being the original software.
```

```
4. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior written
   permission.

THIS SOFTWARE IS PROVIDED BY THE AUTHOR ``AS IS'' AND ANY EXPRESS
OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
ARE DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE LIABLE FOR ANY
DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE
GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS
INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY,
WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING
NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS
SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Julian Seward, jseward@bzip.org
bzip2/libbzip2 version 1.0.6 of 6 September 2010

--------------------------------------------------------------------------
------------------------------------------------------------------
perl/t/porting/copyright.t
------------------------------------------------------------------
#!perl

=head1 NAME

copyright.t

=head1 DESCRIPTION

Tests that the latest copyright years in the top-level README file and the
C<perl -v> output match each other.

If the test fails, update at least one of README and perl.c so that they match
reality.

Optionally you can pass the C<--now> option to check they are at the current
year. This isn't checked by default, so that it doesn't fail for people
working on older releases. It should be run before making a new release.

=cut

use strict;
use Config;
BEGIN { require './test.pl' }

if ( $Config{usecrosscompile} ) {
  skip_all( "Not all files are available during cross-compilation" );
}

my ($opt) = @ARGV;

my $readme_year = readme_year();
my $v_year = v_year();

# Check that both copyright dates are up-to-date, but only if requested, so
# that tests still pass for people intentionally working on older versions:
```

```
if ($opt eq '--now')
{
  my $current_year = (gmtime)[5] + 1900;
  is $v_year, $current_year, 'perl -v copyright includes current year';
  is $readme_year, $current_year, 'README copyright includes current year';
}

# Otherwise simply check that the two copyright dates match each other:
else
{
  is $readme_year, $v_year, 'README and perl -v copyright dates match';
}

done_testing;


sub readme_year
# returns the latest copyright year from the top-level README file
{

  open my $readme, '<', '../README' or die "Opening README failed: $!";

  # The copyright message is the first paragraph:
  local $/ = '';
  my $copyright_msg = <$readme>;

  my ($year) = $copyright_msg =~ /.*\b(\d{4,})/s
      or die "Year not found in README copyright message '$copyright_msg'";

  $year;
}


sub v_year
# returns the latest copyright year shown in perl -v
{

  my $output = runperl switches => ['-v'];
  my ($year) = $output =~ /copyright 1987.*\b(\d{4,})/i
      or die "Copyright statement not found in perl -v output '$output'";

  $year;
}
----------------------------------------------------------------------
perl/dist/ExtUtils-CBuilder/LICENSE
----------------------------------------------------------------------
This software is copyright (c) 2015 by Ken Williams.

This is free software; you can redistribute it and/or modify it under
the same terms as the Perl 5 programming language system itself.

Terms of the Perl programming language system itself

a) the GNU General Public License as published by the Free
   Software Foundation; either version 1, or (at your option) any
   later version, or
b) the "Artistic License"

--- The GNU General Public License, Version 1, February 1989 ---
```

This software is Copyright (c) 2015 by Ken Williams.

This is free software, licensed under:

  The GNU General Public License, Version 1, February 1989

                    GNU GENERAL PUBLIC LICENSE
                     Version 1, February 1989

 Copyright (C) 1989 Free Software Foundation, Inc.
 51 Franklin St, Fifth Floor, Boston, MA 02110-1301 USA

 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The license agreements of most software companies try to keep users
at the mercy of those companies. By contrast, our General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. The
General Public License applies to the Free Software Foundation's
software and to any other program whose authors commit to using it.
You can use it for your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Specifically, the General Public License is designed to make
sure that you have the freedom to give away or sell copies of free
software, that you receive source code or can get it if you want it,
that you can change the software or use pieces of it in new free
programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of a such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must tell them their rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software. If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

```
  0. This License Agreement applies to any program or other work which
contains a notice placed by the copyright holder saying it may be
distributed under the terms of this General Public License.  The
"Program", below, refers to any such program or work, and a "work based
on the Program" means either the Program or any work containing the
Program or a portion of it, either verbatim or with modifications.  Each
licensee is addressed as "you".

  1. You may copy and distribute verbatim copies of the Program's source
code as you receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice and
disclaimer of warranty; keep intact all the notices that refer to this
General Public License and to the absence of any warranty; and give any
other recipients of the Program a copy of this General Public License
along with the Program.  You may charge a fee for the physical act of
transferring a copy.

  2. You may modify your copy or copies of the Program or any portion of
it, and copy and distribute such modifications under the terms of Paragraph
1 above, provided that you also do the following:

    a) cause the modified files to carry prominent notices stating that
    you changed the files and the date of any change; and

    b) cause the whole of any work that you distribute or publish, that
    in whole or in part contains the Program or any part thereof, either
    with or without modifications, to be licensed at no charge to all
    third parties under the terms of this General Public License (except
    that you may choose to grant warranty protection to some or all
    third parties, at your option).

    c) If the modified program normally reads commands interactively when
    run, you must cause it, when started running for such interactive use
    in the simplest and most usual way, to print or display an
    announcement including an appropriate copyright notice and a notice
    that there is no warranty (or else, saying that you provide a
    warranty) and that users may redistribute the program under these
    conditions, and telling the user how to view a copy of this General
    Public License.

    d) You may charge a fee for the physical act of transferring a
    copy, and you may at your option offer warranty protection in
    exchange for a fee.

Mere aggregation of another independent work with the Program (or its
derivative) on a volume of a storage or distribution medium does not bring
the other work under the scope of these terms.

  3. You may copy and distribute the Program (or a portion or derivative of
it, under Paragraph 2) in object code or executable form under the terms of
Paragraphs 1 and 2 above provided that you also do one of the following:

    a) accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of
    Paragraphs 1 and 2 above; or,

    b) accompany it with a written offer, valid for at least three
    years, to give any third party free (except for a nominal charge
```

for the cost of distribution) a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Paragraphs 1 and 2 above; or,

c) accompany it with the information you received as to where the corresponding source code may be obtained. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form alone.)

Source code for a work means the preferred form of the work for making modifications to it. For an executable file, complete source code means all the source code for all modules it contains; but, as a special exception, it need not include source code for modules which are standard libraries that accompany the operating system on which the executable file runs, or for standard header files or definitions files that accompany that operating system.

4. You may not copy, modify, sublicense, distribute or transfer the Program except as expressly provided under this General Public License. Any attempt otherwise to copy, modify, sublicense, distribute or transfer the Program is void, and will automatically terminate your rights to use the Program under this License. However, parties who have received copies, or rights to use copies, from you under this General Public License will not have their licenses terminated so long as such parties remain in full compliance.

5. By copying, distributing or modifying the Program (or any work based on the Program) you indicate your acceptance of this license to do so, and all its terms and conditions.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein.

7. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of the license which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the license, you may choose any version ever published by the Free Software Foundation.

8. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

9. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

10. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to humanity, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) 19yy  <name of author>

This program is free software; you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation; either version 1, or (at your option)
any later version.

This program is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
GNU General Public License for more details.

You should have received a copy of the GNU General Public License
along with this program; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston MA  02110-1301 USA
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
Gnomovision version 69, Copyright (C) 19xx name of author
Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
```

```
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the
appropriate parts of the General Public License.  Of course, the
commands you use may be called something other than `show w' and `show
c'; they could even be mouse-clicks or menu items--whatever suits your
program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  program `Gnomovision' (a program to direct compilers to make passes
  at assemblers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

That's all there is to it!


--- The Artistic License 1.0 ---

This software is Copyright (c) 2015 by Ken Williams.

This is free software, licensed under:

  The Artistic License 1.0

The Artistic License

Preamble

The intent of this document is to state the conditions under which a Package
may be copied, such that the Copyright Holder maintains some semblance of
artistic control over the development of the package, while giving the users of
the package the right to use and distribute the Package in a more-or-less
customary fashion, plus the right to make reasonable modifications.

Definitions:

  - "Package" refers to the collection of files distributed by the Copyright
    Holder, and derivatives of that collection of files created through
    textual modification.
  - "Standard Version" refers to such a Package if it has not been modified,
    or has been modified in accordance with the wishes of the Copyright
    Holder.
  - "Copyright Holder" is whoever is named in the copyright or copyrights for
    the package.
  - "You" is you, if you're thinking about copying or distributing this Package.
  - "Reasonable copying fee" is whatever you can justify on the basis of media
    cost, duplication charges, time of people involved, and so on. (You will
    not be required to justify it to the Copyright Holder, but only to the
    computing community at large as a market that must bear the fee.)
  - "Freely Available" means that no fee is charged for the item itself, though
    there may be fees involved in handling the item. It also means that
    recipients of the item may redistribute it under the same conditions they
```

```
    received it.

1. You may make and give away verbatim copies of the source form of the
Standard Version of this Package without restriction, provided that you
duplicate all of the original copyright notices and associated disclaimers.

2. You may apply bug fixes, portability fixes and other modifications derived
from the Public Domain or from the Copyright Holder. A Package modified in such
a way shall still be considered the Standard Version.

3. You may otherwise modify your copy of this Package in any way, provided that
you insert a prominent notice in each changed file stating how and when you
changed that file, and provided that you do at least ONE of the following:

  a) place your modifications in the Public Domain or otherwise make them
     Freely Available, such as by posting said modifications to Usenet or an
     equivalent medium, or placing the modifications on a major archive site
     such as ftp.uu.net, or by allowing the Copyright Holder to include your
     modifications in the Standard Version of the Package.

  b) use the modified Package only within your corporation or organization.

  c) rename any non-standard executables so the names do not conflict with
     standard executables, which must also be provided, and provide a separate
     manual page for each non-standard executable that clearly documents how it
     differs from the Standard Version.

  d) make other distribution arrangements with the Copyright Holder.

4. You may distribute the programs of this Package in object code or executable
form, provided that you do at least ONE of the following:

  a) distribute a Standard Version of the executables and library files,
     together with instructions (in the manual page or equivalent) on where to
     get the Standard Version.

  b) accompany the distribution with the machine-readable source of the Package
     with your modifications.

  c) accompany any non-standard executables with their corresponding Standard
     Version executables, giving the non-standard executables non-standard
     names, and clearly documenting the differences in manual pages (or
     equivalent), together with instructions on where to get the Standard
     Version.

  d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this
Package.  You may charge any fee you choose for support of this Package. You
may not charge a fee for this Package itself. However, you may distribute this
Package in aggregate with other (possibly commercial) programs as part of a
larger (possibly commercial) software distribution provided that you do not
advertise this Package as a product of your own.

6. The scripts and library files supplied as input to or produced as output
from the programs of this Package do not automatically fall under the copyright
of this Package, but belong to whomever generated them, and may be sold
commercially, and may be aggregated with this Package.
```

```
7. C or perl subroutines supplied by you and linked into this Package shall not
be considered part of this Package.

8. The name of the Copyright Holder may not be used to endorse or promote
products derived from this software without specific prior written permission.

9. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF
MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

----------------------------------------------------------------------
perl/ext/XS-APItest/t/copyhints.t
----------------------------------------------------------------------
use warnings;
use strict;
use Test::More tests => 1;

use XS::APItest;

BEGIN { XS::APItest::test_copyhints(); }
ok 1;

1;
----------------------------------------------------------------------
perl/Copying
----------------------------------------------------------------------

                    GNU GENERAL PUBLIC LICENSE
                     Version 1, February 1989

 Copyright (C) 1989 Free Software Foundation, Inc.
                    51 Franklin St, Fifth Floor, Boston, MA  02110-1301  USA

 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The license agreements of most software companies try to keep users
at the mercy of those companies.  By contrast, our General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  The
General Public License applies to the Free Software Foundation's
software and to any other program whose authors commit to using it.
You can use it for your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Specifically, the General Public License is designed to make
sure that you have the freedom to give away or sell copies of free
software, that you receive source code or can get it if you want it,
that you can change the software or use pieces of it in new free
programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.
```

For example, if you distribute copies of a such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must tell them their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any work containing the Program or a portion of it, either verbatim or with modifications. Each licensee is addressed as "you".

1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this General Public License and to the absence of any warranty; and give any other recipients of the Program a copy of this General Public License along with the Program. You may charge a fee for the physical act of transferring a copy.

2. You may modify your copy or copies of the Program or any portion of it, and copy and distribute such modifications under the terms of Paragraph 1 above, provided that you also do the following:

a) cause the modified files to carry prominent notices stating that you changed the files and the date of any change; and

b) cause the whole of any work that you distribute or publish, that in whole or in part contains the Program or any part thereof, either with or without modifications, to be licensed at no charge to all third parties under the terms of this General Public License (except that you may choose to grant warranty protection to some or all third parties, at your option).

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the simplest and most usual way, to print or display an announcement including an appropriate copyright notice and a notice

that there is no warranty (or else, saying that you provide a
warranty) and that users may redistribute the program under these
conditions, and telling the user how to view a copy of this General
Public License.

d) You may charge a fee for the physical act of transferring a
copy, and you may at your option offer warranty protection in
exchange for a fee.

Mere aggregation of another independent work with the Program (or its
derivative) on a volume of a storage or distribution medium does not bring
the other work under the scope of these terms.

3. You may copy and distribute the Program (or a portion or derivative of
it, under Paragraph 2) in object code or executable form under the terms of
Paragraphs 1 and 2 above provided that you also do one of the following:

a) accompany it with the complete corresponding machine-readable
source code, which must be distributed under the terms of
Paragraphs 1 and 2 above; or,

b) accompany it with a written offer, valid for at least three
years, to give any third party free (except for a nominal charge
for the cost of distribution) a complete machine-readable copy of the
corresponding source code, to be distributed under the terms of
Paragraphs 1 and 2 above; or,

c) accompany it with the information you received as to where the
corresponding source code may be obtained. (This alternative is
allowed only for noncommercial distribution and only if you
received the program in object code or executable form alone.)

Source code for a work means the preferred form of the work for making
modifications to it. For an executable file, complete source code means
all the source code for all modules it contains; but, as a special
exception, it need not include source code for modules which are standard
libraries that accompany the operating system on which the executable
file runs, or for standard header files or definitions files that
accompany that operating system.

4. You may not copy, modify, sublicense, distribute or transfer the
Program except as expressly provided under this General Public License.
Any attempt otherwise to copy, modify, sublicense, distribute or transfer
the Program is void, and will automatically terminate your rights to use
the Program under this License. However, parties who have received
copies, or rights to use copies, from you under this General Public
License will not have their licenses terminated so long as such parties
remain in full compliance.

5. By copying, distributing or modifying the Program (or any work based
on the Program) you indicate your acceptance of this license to do so,
and all its terms and conditions.

6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the original
licensor to copy, distribute or modify the Program subject to these
terms and conditions. You may not impose any further restrictions on the
recipients' exercise of the rights granted herein.

7. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of the license which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the license, you may choose any version ever published by the Free Software Foundation.

8. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

9. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

10. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

Appendix: How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to humanity, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 1, or (at your option)
    any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston MA  02110-1301 USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19xx name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the
appropriate parts of the General Public License.  Of course, the
commands you use may be called something other than `show w' and `show
c'; they could even be mouse-clicks or menu items--whatever suits your
program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  program `Gnomovision' (a program to direct compilers to make passes
  at assemblers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

That's all there is to it!
```

3.76 pkg-config

```
pkg-config
--------------------------------------------------------------------
pkg-config/glib/COPYING
--------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
                    59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright
the library, and (2) offer you this license which gives you legal
permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain
that everyone understands that there is no warranty for this free
library.  If the library is modified by someone else and passed on, we
want its recipients to know that what they have is not the original
```

version, so that any problems introduced by others will not reflect on
the original authors' reputations.

  Finally, any free program is threatened constantly by software
patents. We wish to avoid the danger that companies distributing free
software will individually obtain patent licenses, thus in effect
transforming the program into proprietary software. To prevent this,
we have made it clear that any patent must be licensed for everyone's
free use or not licensed at all.

  Most GNU software, including some libraries, is covered by the ordinary
GNU General Public License, which was designed for utility programs. This
license, the GNU Library General Public License, applies to certain
designated libraries. This license is quite different from the ordinary
one; be sure to read it in full, and don't assume that anything in it is
the same as in the ordinary license.

  The reason we have a separate public license for some libraries is that
they blur the distinction we usually make between modifying or adding to a
program and simply using it. Linking a program with a library, without
changing the library, is in some sense simply using the library, and is
analogous to running a utility program or application program. However, in
a textual and legal sense, the linked executable is a combined work, a
derivative of the original library, and the ordinary General Public License
treats it as such.

  Because of this blurred distinction, using the ordinary General
Public License for libraries did not effectively promote software
sharing, because most developers did not use the libraries. We
concluded that weaker conditions might promote sharing better.

  However, unrestricted linking of non-free programs would deprive the
users of those programs of all benefit from the free status of the
libraries themselves. This Library General Public License is intended to
permit developers of non-free programs to use free libraries, while
preserving your freedom as a user of such programs to change the free
libraries that are incorporated in them. (We have not seen how to achieve
this as regards changes in header files, but we have achieved it as regards
changes in the actual functions of the Library.) The hope is that this
will lead to faster development of free libraries.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, while the latter only
works together with the library.

  Note that it is possible for a library to be covered by the ordinary
General Public License rather than by this special one.

                GNU LIBRARY GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library which
contains a notice placed by the copyright holder or other authorized
party saying it may be distributed under the terms of this Library
General Public License (also called "this License"). Each licensee is

addressed as "you".

  A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

  Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

  You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a table of data to be supplied by an application program that uses the facility, other than as an argument passed when the facility is invoked, then you must make a good faith effort to ensure that, in the event an application does not supply such function or

table, the facility still operates, and performs whatever part of its purpose remains meaningful.

(For example, a function in a library to compute square roots has a purpose that is entirely well-defined independent of the application. Therefore, Subsection 2d requires that any application-supplied function or table used by this function must be optional: if the application does not supply it, the square root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not

compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application

to use the modified definitions.)

b) Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

c) If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

d) Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities. This must be distributed under the terms of the
Sections above.

b) Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the

Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and

"any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

  To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This library is free software; you can redistribute it and/or

```
    modify it under the terms of the GNU Library General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Library General Public License for more details.

    You should have received a copy of the GNU Library General Public
    License along with this library; if not, write to the
    Free Software Foundation, Inc., 59 Temple Place - Suite 330,
    Boston, MA  02111-1307  USA.

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
------------------------------------------------------------------
pkg-config/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
```

These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

  We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

  Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

```
  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License.  (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,
```

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

If distribution of executable or object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place counts as distribution of the source code, even though third parties are not compelled to copy the source along with the object code.

4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then

the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS

TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

```
You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
```

3.77 popt

```
popt
---------------------------------------------------------------
popt/COPYING
---------------------------------------------------------------
Copyright (c) 1998  Red Hat Software

Permission is hereby granted, free of charge, to any person obtaining a copy
of this software and associated documentation files (the "Software"), to deal
in the Software without restriction, including without limitation the rights
to use, copy, modify, merge, publish, distribute, sublicense, and/or sell
copies of the Software, and to permit persons to whom the Software is
furnished to do so, subject to the following conditions:

The above copyright notice and this permission notice shall be included in
all copies or substantial portions of the Software.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT.  IN NO EVENT SHALL THE
X CONSORTIUM BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of the X Consortium shall not be
used in advertising or otherwise to promote the sale, use or other dealings
in this Software without prior written authorization from the X Consortium.
```

3.78 procps-ng

```
procps-ng
------------------------------------------------------------------
procps-ng/COPYING
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the
program proprietary. To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License. The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language. (Hereinafter, translation is included without limitation in
the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but

```
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works.  But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
```

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
procps-ng/COPYING.LIB
----------------------------------------------------------------------
                  GNU LIBRARY GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1991 Free Software Foundation, Inc.
```

```
 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the library GPL.  It is
 numbered 2 because it goes with version 2 of the ordinary GPL.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Library General Public License, applies to some
specially designated Free Software Foundation software, and to any
other libraries whose authors decide to use it.  You can use it for
your libraries, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if
you distribute copies of the library, or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link a program with the library, you must provide
complete object files to the recipients so that they can relink them
with the library, after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  Our method of protecting your rights has two steps: (1) copyright
the library, and (2) offer you this license which gives you legal
permission to copy, distribute and/or modify the library.

  Also, for each distributor's protection, we want to make certain
that everyone understands that there is no warranty for this free
library.  If the library is modified by someone else and passed on, we
want its recipients to know that what they have is not the original
version, so that any problems introduced by others will not reflect on
the original authors' reputations.


  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that companies distributing free
software will individually obtain patent licenses, thus in effect
transforming the program into proprietary software.  To prevent this,
we have made it clear that any patent must be licensed for everyone's
free use or not licensed at all.

  Most GNU software, including some libraries, is covered by the ordinary
```

GNU General Public License, which was designed for utility programs. This license, the GNU Library General Public License, applies to certain designated libraries. This license is quite different from the ordinary one; be sure to read it in full, and don't assume that anything in it is the same as in the ordinary license.

  The reason we have a separate public license for some libraries is that they blur the distinction we usually make between modifying or adding to a program and simply using it. Linking a program with a library, without changing the library, is in some sense simply using the library, and is analogous to running a utility program or application program. However, in a textual and legal sense, the linked executable is a combined work, a derivative of the original library, and the ordinary General Public License treats it as such.

  Because of this blurred distinction, using the ordinary General Public License for libraries did not effectively promote software sharing, because most developers did not use the libraries. We concluded that weaker conditions might promote sharing better.

  However, unrestricted linking of non-free programs would deprive the users of those programs of all benefit from the free status of the libraries themselves. This Library General Public License is intended to permit developers of non-free programs to use free libraries, while preserving your freedom as a user of such programs to change the free libraries that are incorporated in them. (We have not seen how to achieve this as regards changes in header files, but we have achieved it as regards changes in the actual functions of the Library.) The hope is that this will lead to faster development of free libraries.

  The precise terms and conditions for copying, distribution and modification follow. Pay close attention to the difference between a "work based on the library" and a "work that uses the library". The former contains code derived from the library, while the latter only works together with the library.

  Note that it is possible for a library to be covered by the ordinary General Public License rather than by this special one.

GNU LIBRARY GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Library General Public License (also called "this License"). Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is

```
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.


  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application.  Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole.  If
identifiable sections of that work are not derived from the Library,
```

and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to distribute the source code, even though third parties are not compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License.

Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also compile or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

    a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

    b) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

    c) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

    d) Verify that the user has already received a copy of these

materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the source code distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Library General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our

decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

To apply these terms, attach the following notices to the library. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the library's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Library General Public
License as published by the Free Software Foundation; either
version 2 of the License, or (at your option) any later version.

This library is distributed in the hope that it will be useful,
but WITHOUT ANY WARRANTY; without even the implied warranty of
MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
Library General Public License for more details.

You should have received a copy of the GNU Library General Public
License along with this library; if not, write to the Free Software
Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA
```

```
Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
```

3.79 psmisc

```
psmisc
---------------------------------------------------------------------
psmisc/COPYING
---------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                       59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA  02111-1307  USA


Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19yy name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
```

3.80 readline

```
readline
--------------------------------------------------------------------
readline/COPYING
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year>  <name of author>

This program is free software: you can redistribute it and/or modify
it under the terms of the GNU General Public License as published by
the Free Software Foundation, either version 3 of the License, or
(at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.81 screen

```
screen
------------------------------------------------------------------------
screen/COPYING
------------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

  If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

  The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

```
  8. Termination.

  You may not propagate or modify a covered work except as expressly
provided under this License.  Any attempt otherwise to propagate or
modify it is void, and will automatically terminate your rights under
this License (including any patent licenses granted under the third
paragraph of section 11).

  However, if you cease all violation of this License, then your
license from a particular copyright holder is reinstated (a)
provisionally, unless and until the copyright holder explicitly and
finally terminates your license, and (b) permanently, if the copyright
holder fails to notify you of the violation by some reasonable means
prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is
reinstated permanently if the copyright holder notifies you of the
violation by some reasonable means, this is the first time you have
received notice of violation of this License (for any work) from that
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
```

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered
work if you are a party to an arrangement with a third party that is
in the business of distributing software, under which you make payment
to the third party based on the extent of your activity of conveying
the work, and under which the third party grants, to any of the
parties who would receive the covered work from you, a discriminatory
patent license (a) in connection with copies of the covered work
conveyed by you (or copies made from those copies), or (b) primarily
for and in connection with specific products or compilations that
contain the covered work, unless you entered into that arrangement,
or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting
any implied license or other defenses to infringement that may
otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot convey a
covered work so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you may
not convey it at all. For example, if you agree to terms that obligate you
to collect a royalty for further conveying from those to whom you convey
the Program, the only way you could satisfy both those terms and this
License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have
permission to link or combine any covered work with a work licensed
under version 3 of the GNU Affero General Public License into a single
combined work, and to convey the resulting work. The terms of this
License will continue to apply to the part which is the covered work,
but the special requirements of the GNU Affero General Public License,
section 13, concerning interaction through a network will apply to the
combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of
the GNU General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

  Each version is given a distinguishing version number. If the
Program specifies that a certain numbered version of the GNU General
Public License "or any later version" applies to it, you have the
option of following the terms and conditions either of that numbered
version or of any later version published by the Free Software
Foundation. If the Program does not specify a version number of the
GNU General Public License, you may choose any version ever published
by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future
versions of the GNU General Public License can be used, that proxy's
public statement of acceptance of a version permanently authorizes you
to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.
```

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.82 sed

```
sed
-----------------------------------------------------------------
sed/lib/copy-acl.c
-----------------------------------------------------------------
/* Copy access control list from one file to file.  -*- coding: utf-8 -*-

   Copyright (C) 2002-2003, 2005-2017 Free Software Foundation, Inc.

   This program is free software: you can redistribute it and/or modify
   it under the terms of the GNU General Public License as published by
   the Free Software Foundation; either version 3 of the License, or
   (at your option) any later version.

   This program is distributed in the hope that it will be useful,
   but WITHOUT ANY WARRANTY; without even the implied warranty of
   MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
   GNU General Public License for more details.

   You should have received a copy of the GNU General Public License
   along with this program.  If not, see <http://www.gnu.org/licenses/>.

   Written by Paul Eggert, Andreas Grünbacher, and Bruno Haible.  */

#include <config.h>

#include "acl.h"

#include <errno.h>

#include "quote.h"
#include "error.h"
#include "gettext.h"
#define _(msgid) gettext (msgid)


/* Copy access control lists from one file to another. If SOURCE_DESC is
   a valid file descriptor, use file descriptor operations, else use
   filename based operations on SRC_NAME. Likewise for DEST_DESC and
   DST_NAME.
   If access control lists are not available, fchmod the target file to
   MODE.  Also sets the non-permission bits of the destination file
   (S_ISUID, S_ISGID, S_ISVTX) to those from MODE if any are set.
   Return 0 if successful, otherwise output a diagnostic and return a
   negative error code.  */

int
copy_acl (const char *src_name, int source_desc, const char *dst_name,
          int dest_desc, mode_t mode)
{
  int ret = qcopy_acl (src_name, source_desc, dst_name, dest_desc, mode);
  switch (ret)
    {
    case -2:
      error (0, errno, "%s", quote (src_name));
      break;
```

```
    case -1:
      error (0, errno, _("preserving permissions for %s"), quote (dst_name));
      break;

    default:
      break;
    }
  return ret;
}
```

---

sed/COPYING

```
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
```

changed, so that their problems will not be attributed erroneously to authors of previous versions.

  Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2)

tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work for making modifications to it. "Object code" means any non-source form of a work.

A "Standard Interface" means an interface that either is an official standard defined by a recognized standards body, or, in the case of interfaces specified for a particular programming language, one that is widely used among developers working in that language.

The "System Libraries" of an executable work include anything, other than the work as a whole, that (a) is included in the normal form of packaging a Major Component, but which is not part of that Major Component, and (b) serves only to enable use of the work with that Major Component, or to implement a Standard Interface for which an implementation is available to the public in source code form. A "Major Component", in this context, means a major essential component (kernel, window system, and so on) of the specific operating system (if any) on which the executable work runs, or a compiler used to produce the work, or an object code interpreter used to run it.

The "Corresponding Source" for a work in object code form means all the source code needed to generate, install, and (for an executable work) run the object code and to modify the work, including scripts to control those activities. However, it does not include the work's System Libraries, or general-purpose tools or generally available free programs which are used unmodified in performing those activities but which are not part of the work. For example, Corresponding Source includes interface definition files associated with source files for the work, and the source code for shared libraries and dynamically linked subprograms that the work is specifically designed to require, such as by intimate data communication or control flow between those subprograms and other parts of the work.

The Corresponding Source need not include anything that users can regenerate automatically from other parts of the Corresponding Source.

The Corresponding Source for a work in source code form is that same work.

2. Basic Permissions.

All rights granted under this License are granted for the term of copyright on the Program, and are irrevocable provided the stated conditions are met. This License explicitly affirms your unlimited permission to run the unmodified Program. The output from running a covered work is covered by this License only if the output, given its content, constitutes a covered work. This License acknowledges your rights of fair use or other equivalent, as provided by copyright law.

You may make, run and propagate covered works that you do not

convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This

License will therefore apply, along with any applicable section 7
additional terms, to the whole of the work, and all its parts,
regardless of how they are packaged. This License gives no
permission to license the work in any other way, but it does not
invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display
Appropriate Legal Notices; however, if the Program has interactive
interfaces that do not display Appropriate Legal Notices, your
work need not make them do so.

A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit. Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

6. Conveying Non-Source Forms.

You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

a) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by the
Corresponding Source fixed on a durable physical medium
customarily used for software interchange.

b) Convey the object code in, or embodied in, a physical product
(including a physical distribution medium), accompanied by a
written offer, valid for at least three years and valid for as
long as you offer spare parts or customer support for that product
model, to give anyone who possesses the object code either (1) a
copy of the Corresponding Source for all the software in the
product that is covered by this License, on a durable physical
medium customarily used for software interchange, for a price no
more than your reasonable cost of physically performing this
conveying of source, or (2) access to copy the
Corresponding Source from a network server at no charge.

c) Convey individual copies of the object code with a copy of the
written offer to provide the Corresponding Source. This
alternative is allowed only occasionally and noncommercially, and
only if you received the object code with such an offer, in accord
with subsection 6b.

d) Convey the object code by offering access from a designated
place (gratis or for a charge), and offer equivalent access to the
Corresponding Source in the same way through the same place at no
further charge. You need not require recipients to copy the
Corresponding Source along with the object code. If the place to
copy the object code is a network server, the Corresponding Source
may be on a different server (operated by you or a third party)
that supports equivalent copying facilities, provided you maintain

clear directions next to the object code saying where to find the
Corresponding Source. Regardless of what server hosts the
Corresponding Source, you remain obligated to ensure that it is
available for as long as needed to satisfy these requirements.

e) Convey the object code using peer-to-peer transmission, provided
you inform other peers where the object code and Corresponding
Source of the work are being offered to the general public at no
charge under subsection 6d.

A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent
the only significant mode of use of the product.

"Installation Information" for a User Product means any methods,
procedures, authorization keys, or other information required to install
and execute modified versions of a covered work in that User Product from
a modified version of its Corresponding Source. The information must
suffice to ensure that the continued functioning of the modified object
code is in no case prevented or interfered with solely because
modification has been made.

If you convey an object code work under this section in, or with, or
specifically for use in, a User Product, and the conveying occurs as
part of a transaction in which the right of possession and use of the
User Product is transferred to the recipient in perpetuity or for a
fixed term (regardless of how the transaction is characterized), the
Corresponding Source conveyed under this section must be accompanied
by the Installation Information. But this requirement does not apply
if neither you nor any third party retains the ability to install
modified object code on the User Product (for example, the work has
been installed in ROM).

The requirement to provide Installation Information does not include a
requirement to continue to provide support service, warranty, or updates
for a work that has been modified or installed by the recipient, or for
the User Product in which it has been modified or installed. Access to a
network may be denied when the modification itself materially and
adversely affects the operation of the network or violates the rules and
protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided,
in accord with this section must be in a format that is publicly
documented (and with an implementation available to the public in
source code form), and must require no special password or key for
unpacking, reading or copying.

```
  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this
License by making exceptions from one or more of its conditions.
Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law.  If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it.  (Additional permissions may be written to require their own
removal in certain cases when you modify the work.)  You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10.  If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term.  If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
```

where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the

Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered

work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>
```

```
    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.83 shadow

```
shadow
----------------------------------------------------------------------
shadow/libmisc/copydir.c
----------------------------------------------------------------------
/*
 * Copyright (c) 1991 - 1994, Julianne Frances Haugh
 * Copyright (c) 1996 - 2001, Marek łMichakiewicz
 * Copyright (c) 2003 - 2006, Tomasz łKoczko
 * Copyright (c) 2007 - 2010, Nicolas François
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. The name of the copyright holders or contributors may not be used to
 *    endorse or promote products derived from this software without
 *    specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS
 * ``AS IS'' AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT
 * LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A
 * PARTICULAR PURPOSE ARE DISCLAIMED.  IN NO EVENT SHALL THE COPYRIGHT
 * HOLDERS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL,
 * SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT
 * LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE,
 * DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY
 * THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE
 * OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.
 */

#include <config.h>

#ident "$Id$"

#include <assert.h>
#include <sys/stat.h>
#include <sys/types.h>
#include <sys/time.h>
#include <fcntl.h>
#include <stdio.h>
#include "prototypes.h"
#include "defines.h"
#ifdef WITH_SELINUX
#include <selinux/selinux.h>
#endif                          /* WITH_SELINUX */
#if defined(WITH_ACL) || defined(WITH_ATTR)
#include <stdarg.h>
#include <attr/error_context.h>
#endif                          /* WITH_ACL || WITH_ATTR */
```

```
#ifdef WITH_ACL
#include <acl/libacl.h>
#endif                          /* WITH_ACL */
#ifdef WITH_ATTR
#include <attr/libattr.h>
#endif                          /* WITH_ATTR */


static /*@null@*/const char *src_orig;
static /*@null@*/const char *dst_orig;

struct link_name {
        dev_t ln_dev;
        ino_t ln_ino;
        nlink_t ln_count;
        char *ln_name;
        /*@dependent@*/struct link_name *ln_next;
};
static /*@exposed@*/struct link_name *links;

static int copy_entry (const char *src, const char *dst,
                       bool reset_selinux,
                       uid_t old_uid, uid_t new_uid,
                       gid_t old_gid, gid_t new_gid);
static int copy_dir (const char *src, const char *dst,
                     bool reset_selinux,
                     const struct stat *statp, const struct timeval mt[],
                     uid_t old_uid, uid_t new_uid,
                     gid_t old_gid, gid_t new_gid);
#ifdef  S_IFLNK
static /*@null@*/char *readlink_malloc (const char *filename);
static int copy_symlink (const char *src, const char *dst,
                         unused bool reset_selinux,
                         const struct stat *statp, const struct timeval mt[],
                         uid_t old_uid, uid_t new_uid,
                         gid_t old_gid, gid_t new_gid);
#endif                          /* S_IFLNK */
static int copy_hardlink (const char *dst,
                          unused bool reset_selinux,
                          struct link_name *lp);
static int copy_special (const char *src, const char *dst,
                         bool reset_selinux,
                         const struct stat *statp, const struct timeval mt[],
                         uid_t old_uid, uid_t new_uid,
                         gid_t old_gid, gid_t new_gid);
static int copy_file (const char *src, const char *dst,
                      bool reset_selinux,
                      const struct stat *statp, const struct timeval mt[],
                      uid_t old_uid, uid_t new_uid,
                      gid_t old_gid, gid_t new_gid);
static int chown_if_needed (const char *dst, const struct stat *statp,
                            uid_t old_uid, uid_t new_uid,
                            gid_t old_gid, gid_t new_gid);
static int lchown_if_needed (const char *dst, const struct stat *statp,
                             uid_t old_uid, uid_t new_uid,
                             gid_t old_gid, gid_t new_gid);
static int fchown_if_needed (int fdst, const struct stat *statp,
                             uid_t old_uid, uid_t new_uid,
                             gid_t old_gid, gid_t new_gid);
```

```
#if defined(WITH_ACL) || defined(WITH_ATTR)
/*
 * error_acl - format the error messages for the ACL and EQ libraries.
 */
static void error_acl (struct error_context *ctx, const char *fmt, ...)
{
        va_list ap;

        /* ignore the case when destination does not support ACLs
         * or extended attributes */
        if (ENOTSUP == errno) {
                errno = 0;
                return;
        }

        va_start (ap, fmt);
        (void) fprintf (stderr, _("%s: "), Prog);
        if (vfprintf (stderr, fmt, ap) != 0) {
                (void) fputs (_(": "), stderr);
        }
        (void) fprintf (stderr, "%s\n", strerror (errno));
        va_end (ap);
}

static struct error_context ctx = {
        error_acl
};
#endif                          /* WITH_ACL || WITH_ATTR */

/*
 * remove_link - delete a link from the linked list
 */
static void remove_link (/*@only@*/struct link_name *ln)
{
        struct link_name *lp;

        if (links == ln) {
                links = ln->ln_next;
                free (ln->ln_name);
                free (ln);
                return;
        }
        for (lp = links; NULL !=lp; lp = lp->ln_next) {
                if (lp->ln_next == ln) {
                        break;
                }
        }

        if (NULL == lp) {
                free (ln->ln_name);
                free (ln);
                return;
        }

        lp->ln_next = lp->ln_next->ln_next;
        free (ln->ln_name);
        free (ln);
}
```

```
/*
 * check_link - see if a file is really a link
 */

static /*@exposed@*/ /*@null@*/struct link_name *check_link (const char *name, const struct stat *sb)
{
        struct link_name *lp;
        size_t src_len;
        size_t dst_len;
        size_t name_len;
        size_t len;

        /* copy_tree () must be the entry point */
        assert (NULL != src_orig);
        assert (NULL != dst_orig);

        for (lp = links; NULL != lp; lp = lp->ln_next) {
                if ((lp->ln_dev == sb->st_dev) && (lp->ln_ino == sb->st_ino)) {
                        return lp;
                }
        }

        if (sb->st_nlink == 1) {
                return NULL;
        }

        lp = (struct link_name *) xmalloc (sizeof *lp);
        src_len = strlen (src_orig);
        dst_len = strlen (dst_orig);
        name_len = strlen (name);
        lp->ln_dev = sb->st_dev;
        lp->ln_ino = sb->st_ino;
        lp->ln_count = sb->st_nlink;
        len = name_len - src_len + dst_len + 1;
        lp->ln_name = (char *) xmalloc (len);
        (void) snprintf (lp->ln_name, len, "%s%s", dst_orig, name + src_len);
        lp->ln_next = links;
        links = lp;

        return NULL;
}

/*
 * copy_tree - copy files in a directory tree
 *
 *      copy_tree() walks a directory tree and copies ordinary files
 *      as it goes.
 *
 *      When reset_selinux is enabled, extended attributes (and thus
 *      SELinux attributes) are not copied.
 *
 *      old_uid and new_uid are used to set the ownership of the copied
 *      files. Unless old_uid is set to -1, only the files owned by
 *      old_uid have their ownership changed to new_uid. In addition, if
 *      new_uid is set to -1, no ownership will be changed.
 *
 *      The same logic applies for the group-ownership and
 *      old_gid/new_gid.
```

```
 */
int copy_tree (const char *src_root, const char *dst_root,
               bool copy_root, bool reset_selinux,
               uid_t old_uid, uid_t new_uid,
               gid_t old_gid, gid_t new_gid)
{
        int err = 0;
        bool set_orig = false;
        struct DIRECT *ent;
        DIR *dir;

        if (copy_root) {
                struct stat sb;
                if (access (dst_root, F_OK) == 0) {
                        return -1;
                }

                if (LSTAT (src_root, &sb) == -1) {
                        return -1;
                }

                if (!S_ISDIR (sb.st_mode)) {
                        fprintf (stderr,
                                 "%s: %s is not a directory",
                                 Prog, src_root);
                        return -1;
                }

                return copy_entry (src_root, dst_root, reset_selinux,
                                   old_uid, new_uid, old_gid, new_gid);
        }

        /*
         * Make certain both directories exist.  This routine is called
         * after the home directory is created, or recursively after the
         * target is created.  It assumes the target directory exists.
         */

        if (   (access (src_root, F_OK) != 0)
            || (access (dst_root, F_OK) != 0)) {
                return -1;
        }

        /*
         * Open the source directory and read each entry.  Every file
         * entry in the directory is copied with the UID and GID set
         * to the provided values.  As an added security feature only
         * regular files (and directories ...) are copied, and no file
         * is made set-ID.
         */
        dir = opendir (src_root);
        if (NULL == dir) {
                return -1;
        }

        if (src_orig == NULL) {
                src_orig = src_root;
                dst_orig = dst_root;
                set_orig = true;
```

```
        }
        while ((0 == err) && (ent = readdir (dir)) != NULL) {
                /*
                 * Skip the "." and ".." entries
                 */
                if ((strcmp (ent->d_name, ".") != 0) &&
                    (strcmp (ent->d_name, "..") != 0)) {
                        char *src_name;
                        char *dst_name;
                        size_t src_len = strlen (ent->d_name) + 2;
                        size_t dst_len = strlen (ent->d_name) + 2;
                        src_len += strlen (src_root);
                        dst_len += strlen (dst_root);

                        src_name = (char *) malloc (src_len);
                        dst_name = (char *) malloc (dst_len);

                        if ((NULL == src_name) || (NULL == dst_name)) {
                                err = -1;
                        } else {
                                /*
                                 * Build the filename for both the source and
                                 * the destination files.
                                 */
                                (void) snprintf (src_name, src_len, "%s/%s",
                                                 src_root, ent->d_name);
                                (void) snprintf (dst_name, dst_len, "%s/%s",
                                                 dst_root, ent->d_name);

                                err = copy_entry (src_name, dst_name,
                                                  reset_selinux,
                                                  old_uid, new_uid,
                                                  old_gid, new_gid);
                        }
                        if (NULL != src_name) {
                                free (src_name);
                        }
                        if (NULL != dst_name) {
                                free (dst_name);
                        }
                }
        }
        (void) closedir (dir);

        if (set_orig) {
                src_orig = NULL;
                dst_orig = NULL;
                /* FIXME: clean links
                 * Since there can be hardlinks elsewhere on the device,
                 * we cannot check that all the hardlinks were found:
                assert (NULL == links);
                 */
        }

#ifdef WITH_SELINUX
        /* Reset SELinux to create files with default contexts.
         * Note that the context is only reset on exit of copy_tree (it is
         * assumed that the program would quit without needing a restored
         * context if copy_tree failed previously), and that copy_tree can
```

```
         * be called recursively (hence the context is set on the
         * sub-functions of copy_entry).
         */
        if (reset_selinux_file_context () != 0) {
                err = -1;
        }
#endif                          /* WITH_SELINUX */

        return err;
}

/*
 * copy_entry - copy the entry of a directory
 *
 *      Copy the entry src to dst.
 *      Depending on the type of entry, this function will forward the
 *      request to copy_dir(), copy_symlink(), copy_hardlink(),
 *      copy_special(), or copy_file().
 *
 *      The access and modification time will not be modified.
 *
 *      The permissions will be set to new_uid/new_gid.
 *
 *      If new_uid (resp. new_gid) is equal to -1, the user (resp. group) will
 *      not be modified.
 *
 *      Only the files owned (resp. group-owned) by old_uid (resp.
 *      old_gid) will be modified, unless old_uid (resp. old_gid) is set
 *      to -1.
 */
static int copy_entry (const char *src, const char *dst,
                       bool reset_selinux,
                       uid_t old_uid, uid_t new_uid,
                       gid_t old_gid, gid_t new_gid)
{
        int err = 0;
        struct stat sb;
        struct link_name *lp;
        struct timeval mt[2];

        if (LSTAT (src, &sb) == -1) {
                /* If we cannot stat the file, do not care. */
        } else {
#ifdef HAVE_STRUCT_STAT_ST_ATIM
                mt[0].tv_sec  = sb.st_atim.tv_sec;
                mt[0].tv_usec = sb.st_atim.tv_nsec / 1000;
#else                           /* !HAVE_STRUCT_STAT_ST_ATIM */
                mt[0].tv_sec  = sb.st_atime;
# ifdef HAVE_STRUCT_STAT_ST_ATIMENSEC
                mt[0].tv_usec = sb.st_atimensec / 1000;
# else                          /* !HAVE_STRUCT_STAT_ST_ATIMENSEC */
                mt[0].tv_usec = 0;
# endif                         /* !HAVE_STRUCT_STAT_ST_ATIMENSEC */
#endif                          /* !HAVE_STRUCT_STAT_ST_ATIM */

#ifdef HAVE_STRUCT_STAT_ST_MTIM
                mt[1].tv_sec  = sb.st_mtim.tv_sec;
                mt[1].tv_usec = sb.st_mtim.tv_nsec / 1000;
#else                           /* !HAVE_STRUCT_STAT_ST_MTIM */
```

```
                mt[1].tv_sec  = sb.st_mtime;
# ifdef HAVE_STRUCT_STAT_ST_MTIMENSEC
                mt[1].tv_usec = sb.st_mtimensec / 1000;
# else                          /* !HAVE_STRUCT_STAT_ST_MTIMENSEC */
                mt[1].tv_usec = 0;
# endif                         /* !HAVE_STRUCT_STAT_ST_MTIMENSEC */
#endif                          /* !HAVE_STRUCT_STAT_ST_MTIM */

                if (S_ISDIR (sb.st_mode)) {
                        err = copy_dir (src, dst, reset_selinux, &sb, mt,
                                        old_uid, new_uid, old_gid, new_gid);
                }

#ifdef  S_IFLNK
                /*
                 * Copy any symbolic links
                 */

                else if (S_ISLNK (sb.st_mode)) {
                        err = copy_symlink (src, dst, reset_selinux, &sb, mt,
                                            old_uid, new_uid, old_gid, new_gid);
                }
#endif                          /* S_IFLNK */

                /*
                 * See if this is a previously copied link
                 */

                else if ((lp = check_link (src, &sb)) != NULL) {
                        err = copy_hardlink (dst, reset_selinux, lp);
                }

                /*
                 * Deal with FIFOs and special files.  The user really
                 * shouldn't have any of these, but it seems like it
                 * would be nice to copy everything ...
                 */

                else if (!S_ISREG (sb.st_mode)) {
                        err = copy_special (src, dst, reset_selinux, &sb, mt,
                                            old_uid, new_uid, old_gid, new_gid);
                }

                /*
                 * Create the new file and copy the contents.  The new
                 * file will be owned by the provided UID and GID values.
                 */

                else {
                        err = copy_file (src, dst, reset_selinux, &sb, mt,
                                         old_uid, new_uid, old_gid, new_gid);
                }
        }

        return err;
}

/*
 * copy_dir - copy a directory
```

```
 *
 *      Copy a directory (recursively) from src to dst.
 *
 *      statp, mt, old_uid, new_uid, old_gid, and new_gid are used to set
 *      the access and modification and the access rights.
 *
 *      Return 0 on success, -1 on error.
 */
static int copy_dir (const char *src, const char *dst,
                     bool reset_selinux,
                     const struct stat *statp, const struct timeval mt[],
                     uid_t old_uid, uid_t new_uid,
                     gid_t old_gid, gid_t new_gid)
{
        int err = 0;

        /*
         * Create a new target directory, make it owned by
         * the user and then recursively copy that directory.
         */

#ifdef WITH_SELINUX
        if (set_selinux_file_context (dst) != 0) {
                return -1;
        }
#endif                          /* WITH_SELINUX */
        if (   (mkdir (dst, statp->st_mode) != 0)
            || (chown_if_needed (dst, statp,
                                 old_uid, new_uid, old_gid, new_gid) != 0)
#ifdef WITH_ACL
            || (   (perm_copy_file (src, dst, &ctx) != 0)
                && (errno != 0))
#else                           /* !WITH_ACL */
            || (chmod (dst, statp->st_mode) != 0)
#endif                          /* !WITH_ACL */
#ifdef WITH_ATTR
        /*
         * If the third parameter is NULL, all extended attributes
         * except those that define Access Control Lists are copied.
         * ACLs are excluded by default because copying them between
         * file systems with and without ACL support needs some
         * additional logic so that no unexpected permissions result.
         */
            || (   !reset_selinux
                && (attr_copy_file (src, dst, NULL, &ctx) != 0)
                && (errno != 0))
#endif                          /* WITH_ATTR */
            || (copy_tree (src, dst, false, reset_selinux,
                           old_uid, new_uid, old_gid, new_gid) != 0)
            || (utimes (dst, mt) != 0)) {
                err = -1;
        }

        return err;
}

#ifdef  S_IFLNK
/*
 * readlink_malloc - wrapper for readlink
```

```
 *
 * return NULL on error.
 * The return string shall be freed by the caller.
 */
static /*@null@*/char *readlink_malloc (const char *filename)
{
        size_t size = 1024;

        while (true) {
                ssize_t nchars;
                char *buffer = (char *) malloc (size);
                if (NULL == buffer) {
                        return NULL;
                }

                nchars = readlink (filename, buffer, size);

                if (nchars < 0) {
                        free(buffer);
                        return NULL;
                }

                if ((size_t) nchars < size) { /* The buffer was large enough */
                        /* readlink does not nul-terminate */
                        buffer[nchars] = '\0';
                        return buffer;
                }

                /* Try again with a bigger buffer */
                free (buffer);
                size *= 2;
        }
}

/*
 * copy_symlink - copy a symlink
 *
 *      Copy a symlink from src to dst.
 *
 *      statp, mt, old_uid, new_uid, old_gid, and new_gid are used to set
 *      the access and modification and the access rights.
 *
 *      Return 0 on success, -1 on error.
 */
static int copy_symlink (const char *src, const char *dst,
                         unused bool reset_selinux,
                         const struct stat *statp, const struct timeval mt[],
                         uid_t old_uid, uid_t new_uid,
                         gid_t old_gid, gid_t new_gid)
{
        char *oldlink;

        /* copy_tree () must be the entry point */
        assert (NULL != src_orig);
        assert (NULL != dst_orig);

        /*
         * Get the name of the file which the link points
         * to.  If that name begins with the original
```

```
         * source directory name, that part of the link
         * name will be replaced with the original
         * destination directory name.
         */

        oldlink = readlink_malloc (src);
        if (NULL == oldlink) {
                return -1;
        }

        /* If src was a link to an entry of the src_orig directory itself,
         * create a link to the corresponding entry in the dst_orig
         * directory.
         */
        if (strncmp (oldlink, src_orig, strlen (src_orig)) == 0) {
                size_t len = strlen (dst_orig) + strlen (oldlink) - strlen (src_orig) + 1;
                char *dummy = (char *) xmalloc (len);
                (void) snprintf (dummy, len, "%s%s",
                                 dst_orig,
                                 oldlink + strlen (src_orig));
                free (oldlink);
                oldlink = dummy;
        }

#ifdef WITH_SELINUX
        if (set_selinux_file_context (dst) != 0) {
                free (oldlink);
                return -1;
        }
#endif                          /* WITH_SELINUX */
        if (   (symlink (oldlink, dst) != 0)
            || (lchown_if_needed (dst, statp,
                                  old_uid, new_uid, old_gid, new_gid) != 0)) {
                /* FIXME: there are no modes on symlinks, right?
                 *        ACL could be copied, but this would be much more
                 *        complex than calling perm_copy_file.
                 *        Ditto for Extended Attributes.
                 *        We currently only document that ACL and Extended
                 *        Attributes are not copied.
                 */
                free (oldlink);
                return -1;
        }
        free (oldlink);

#ifdef HAVE_LUTIMES
        /* 2007-10-18: We don't care about
         *  exit status of lutimes because
         *  it returns ENOSYS on many system
         *  - not implemented
         */
        (void) lutimes (dst, mt);
#endif                          /* HAVE_LUTIMES */

        return 0;
}
#endif                          /* S_IFLNK */

/*
```

```
 * copy_hardlink - copy a hardlink
 *
 *      Copy a hardlink from src to dst.
 *
 *      Return 0 on success, -1 on error.
 */
static int copy_hardlink (const char *dst,
                          unused bool reset_selinux,
                          struct link_name *lp)
{
        /* FIXME: selinux, ACL, Extended Attributes needed? */

        if (link (lp->ln_name, dst) != 0) {
                return -1;
        }

        /* If the file could be unlinked, decrement the links counter,
         * and forget about this link if it was the last reference */
        lp->ln_count--;
        if (lp->ln_count <= 0) {
                remove_link (lp);
        }

        return 0;
}

/*
 * copy_special - copy a special file
 *
 *      Copy a special file from src to dst.
 *
 *      statp, mt, old_uid, new_uid, old_gid, and new_gid are used to set
 *      the access and modification and the access rights.
 *
 *      Return 0 on success, -1 on error.
 */
static int copy_special (const char *src, const char *dst,
                         bool reset_selinux,
                         const struct stat *statp, const struct timeval mt[],
                         uid_t old_uid, uid_t new_uid,
                         gid_t old_gid, gid_t new_gid)
{
        int err = 0;

#ifdef WITH_SELINUX
        if (set_selinux_file_context (dst) != 0) {
                return -1;
        }
#endif                          /* WITH_SELINUX */

        if (   (mknod (dst, statp->st_mode & ~07777, statp->st_rdev) != 0)
            || (chown_if_needed (dst, statp,
                                 old_uid, new_uid, old_gid, new_gid) != 0)
#ifdef WITH_ACL
            || (   (perm_copy_file (src, dst, &ctx) != 0)
                && (errno != 0))
#else                           /* !WITH_ACL */
            || (chmod (dst, statp->st_mode & 07777) != 0)
#endif                          /* !WITH_ACL */
```

```
#ifdef WITH_ATTR
        /*
         * If the third parameter is NULL, all extended attributes
         * except those that define Access Control Lists are copied.
         * ACLs are excluded by default because copying them between
         * file systems with and without ACL support needs some
         * additional logic so that no unexpected permissions result.
         */
            || (   !reset_selinux
                && (attr_copy_file (src, dst, NULL, &ctx) != 0)
                && (errno != 0))
#endif                          /* WITH_ATTR */
            || (utimes (dst, mt) != 0)) {
                err = -1;
        }

        return err;
}

/*
 * copy_file - copy a file
 *
 *      Copy a file from src to dst.
 *
 *      statp, mt, old_uid, new_uid, old_gid, and new_gid are used to set
 *      the access and modification and the access rights.
 *
 *      Return 0 on success, -1 on error.
 */
static int copy_file (const char *src, const char *dst,
                      bool reset_selinux,
                      const struct stat *statp, const struct timeval mt[],
                      uid_t old_uid, uid_t new_uid,
                      gid_t old_gid, gid_t new_gid)
{
        int err = 0;
        int ifd;
        int ofd;
        char buf[1024];
        ssize_t cnt;

        ifd = open (src, O_RDONLY);
        if (ifd < 0) {
                return -1;
        }
#ifdef WITH_SELINUX
        if (set_selinux_file_context (dst) != 0) {
                return -1;
        }
#endif                          /* WITH_SELINUX */
        ofd = open (dst, O_WRONLY | O_CREAT | O_TRUNC, statp->st_mode & 07777);
        if (   (ofd < 0)
            || (fchown_if_needed (ofd, statp,
                                  old_uid, new_uid, old_gid, new_gid) != 0)
#ifdef WITH_ACL
            || (   (perm_copy_fd (src, ifd, dst, ofd, &ctx) != 0)
                && (errno != 0))
#else                           /* !WITH_ACL */
            || (fchmod (ofd, statp->st_mode & 07777) != 0)
```

```
#endif                          /* !WITH_ACL */
#ifdef WITH_ATTR
        /*
         * If the third parameter is NULL, all extended attributes
         * except those that define Access Control Lists are copied.
         * ACLs are excluded by default because copying them between
         * file systems with and without ACL support needs some
         * additional logic so that no unexpected permissions result.
         */
            || (   !reset_selinux
                && (attr_copy_fd (src, ifd, dst, ofd, NULL, &ctx) != 0)
                && (errno != 0))
#endif                          /* WITH_ATTR */
           ) {
                (void) close (ifd);
                return -1;
        }

        while ((cnt = read (ifd, buf, sizeof buf)) > 0) {
                if (write (ofd, buf, (size_t)cnt) != cnt) {
                        (void) close (ifd);
                        return -1;
                }
        }

        (void) close (ifd);

#ifdef HAVE_FUTIMES
        if (futimes (ofd, mt) != 0) {
                return -1;
        }
#endif                          /* HAVE_FUTIMES */

        if (close (ofd) != 0) {
                return -1;
        }

#ifndef HAVE_FUTIMES
        if (utimes(dst, mt) != 0) {
                return -1;
        }
#endif                          /* !HAVE_FUTIMES */

        return err;
}

#define def_chown_if_needed(chown_function, type_dst)                 \
static int chown_function ## _if_needed (type_dst dst,                \
                                         const struct stat *statp,    \
                                         uid_t old_uid, uid_t new_uid, \
                                         gid_t old_gid, gid_t new_gid) \
{                                                                     \
        uid_t tmpuid = (uid_t) -1;                                    \
        gid_t tmpgid = (gid_t) -1;                                    \
                                                                      \
        /* Use new_uid if old_uid is set to -1 or if the file was     \
         * owned by the user. */                                      \
        if (((uid_t) -1 == old_uid) || (statp->st_uid == old_uid)) {  \
                tmpuid = new_uid;                                     \
```

```
        }                                                               \
        /* Otherwise, or if new_uid was set to -1, we keep the same    \
         * owner. */                                                   \
        if ((uid_t) -1 == tmpuid) {                                     \
                tmpuid = statp->st_uid;                                 \
        }                                                               \
                                                                        \
        if (((gid_t) -1 == old_gid) || (statp->st_gid == old_gid)) {    \
                tmpgid = new_gid;                                       \
        }                                                               \
        if ((gid_t) -1 == tmpgid) {                                     \
                tmpgid = statp->st_gid;                                 \
        }                                                               \
                                                                        \
        return chown_function (dst, tmpuid, tmpgid);                    \
}

def_chown_if_needed (chown, const char *)
def_chown_if_needed (lchown, const char *)
def_chown_if_needed (fchown, int)

----------------------------------------------------------------------
shadow/COPYING
----------------------------------------------------------------------
NOTE:
  This license has been obsoleted by the change to the BSD-style copyright.
  You may continue to use this license if you wish, but you are under no
  obligation to do so.

(*
This document is freely plagiarised from the 'Artistic Licence',
distributed as part of the Perl v4.0 kit by Larry Wall, which is
available from most major archive sites.  I stole it from CrackLib.

        $Id$
*)

This documents purpose is to state the conditions under which this
Package (See definition below) viz: "Shadow", the Shadow Password Suite
which is held by Julianne Frances Haugh, may be copied, such that the
copyright holder maintains some semblance of artistic control over the
development of the package, while giving the users of the package the
right to use and distribute the Package in a more-or-less customary
fashion, plus the right to make reasonable modifications.

So there.

**************************************************************************

Definitions:


A "Package" refers to the collection of files distributed by the
Copyright Holder, and derivatives of that collection of files created
through textual modification, or segments thereof.

"Standard Version" refers to such a Package if it has not been modified,
or has been modified in accordance with the wishes of the Copyright
Holder.
```

"Copyright Holder" is whoever is named in the copyright or copyrights
for the package.

"You" is you, if you're thinking about copying or distributing this
Package.

"Reasonable copying fee" is whatever you can justify on the basis of
media cost, duplication charges, time of people involved, and so on.
(You will not be required to justify it to the Copyright Holder, but
only to the computing community at large as a market that must bear the
fee.)

"Freely Available" means that no fee is charged for the item itself,
though there may be fees involved in handling the item. It also means
that recipients of the item may redistribute it under the same
conditions they received it.

1. You may make and give away verbatim copies of the source form of the
Standard Version of this Package without restriction, provided that you
duplicate all of the original copyright notices and associated
disclaimers.

2. You may apply bug fixes, portability fixes and other modifications
derived from the Public Domain or from the Copyright Holder. A Package
modified in such a way shall still be considered the Standard Version.

3. You may otherwise modify your copy of this Package in any way,
provided that you insert a prominent notice in each changed file stating
how and when AND WHY you changed that file, and provided that you do at
least ONE of the following:

a) place your modifications in the Public Domain or otherwise make them
Freely Available, such as by posting said modifications to Usenet or an
equivalent medium, or placing the modifications on a major archive site
such as uunet.uu.net, or by allowing the Copyright Holder to include
your modifications in the Standard Version of the Package.

b) use the modified Package only within your corporation or organization.

c) rename any non-standard executables so the names do not conflict with
standard executables, which must also be provided, and provide separate
documentation for each non-standard executable that clearly documents
how it differs from the Standard Version.

d) make other distribution arrangements with the Copyright Holder.

4. You may distribute the programs of this Package in object code or
executable form, provided that you do at least ONE of the following:

a) distribute a Standard Version of the executables and library files,
together with instructions (in the manual page or equivalent) on where
to get the Standard Version.

b) accompany the distribution with the machine-readable source of the
Package with your modifications.

c) accompany any non-standard executables with their corresponding

Standard Version executables, giving the non-standard executables
non-standard names, and clearly documenting the differences in manual
pages (or equivalent), together with instructions on where to get the
Standard Version.

d) make other distribution arrangements with the Copyright Holder.

5. You may charge a reasonable copying fee for any distribution of this
Package. You may charge any fee you choose for support of this Package.
YOU MAY NOT CHARGE A FEE FOR THIS PACKAGE ITSELF. However, you may
distribute this Package in aggregate with other (possibly commercial)
programs as part of a larger (possibly commercial) software distribution
provided that YOU DO NOT ADVERTISE this package as a product of your
own.

6. The name of the Copyright Holder may not be used to endorse or
promote products derived from this software without specific prior
written permission.

7. THIS PACKAGE IS PROVIDED "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF
MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE.

The End

3.84 sysklogd

```
sysklogd
---------------------------------------------------------------------
sysklogd/COPYING
---------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.
                          675 Mass Ave, Cambridge, MA 02139, USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Library General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this

License. (Exception: if the Program itself is interactive but
does not normally print such an announcement, your work based on
the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent

access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

        Appendix: How to Apply These Terms to Your New Programs

```
  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) 19yy  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 675 Mass Ave, Cambridge, MA 02139, USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) 19yy name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Library General
Public License instead of this License.
```

3.85 sysvinit

```
sysvinit
-----------------------------------------------------------------
sysvinit/COPYRIGHT
-----------------------------------------------------------------
Sysvinit is Copyright (C) 1991-2004 Miquel van Smoorenburg

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program; if not, write to the Free Software
    Foundation, Inc., 51 Franklin St, Fifth Floor, Boston, MA  02110-1301 USA

On Debian GNU/Linux systems, the complete text of the GNU General
Public License can be found in `/usr/share/common-licenses/GPL-2'.

Send patches to sysvinit-devel@nongnu.org

The of the start-stop-daemon

 * A rewrite of the original Debian's start-stop-daemon Perl script
 * in C (faster - it is executed many times during system startup).
 *
 * Written by Marek Michalkiewicz <marekm@i17linuxb.ists.pwr.wroc.pl>,
 * public domain.

-----------------------------------------------------------------
sysvinit/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.
```

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs; and that you know you can do these things.

To protect your rights, we need to make restrictions that forbid anyone to deny you these rights or to ask you to surrender the rights. These restrictions translate to certain responsibilities for you if you distribute copies of the software, or if you modify it.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must give the recipients all the rights that you have. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

We protect your rights with two steps: (1) copyright the software, and (2) offer you this license which gives you legal permission to copy, distribute and/or modify the software.

Also, for each author's protection and ours, we want to make certain that everyone understands that there is no warranty for this free software. If the software is modified by someone else and passed on, we want its recipients to know that what they have is not the original, so that any problems introduced by others will not reflect on the original authors' reputations.

Finally, any free program is threatened constantly by software patents. We wish to avoid the danger that redistributors of a free program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

```
    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code.  (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.
```

7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and

of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively convey the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

```
    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
```

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this when it starts in an interactive mode:

```
    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.
```

The hypothetical commands `show w' and `show c' should show the appropriate parts of the General Public License. Of course, the commands you use may be called something other than `show w' and `show c'; they could even be mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your school, if any, to sign a "copyright disclaimer" for the program, if necessary. Here is a sample; alter the names:

```
  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice
```

This General Public License does not permit incorporating your program into proprietary programs. If your program is a subroutine library, you may consider it more useful to permit linking proprietary applications with the library. If this is what you want to do, use the GNU Lesser General Public License instead of this License.

3.86 tar

```
tar
-----------------------------------------------------------------
tar/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
```

can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

  Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

  The precise terms and conditions for copying, distribution and modification follow.

                       TERMS AND CONDITIONS

  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based on the Program.

  To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

```
  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities.  However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work.  For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met.  This License explicitly affirms your unlimited
permission to run the unmodified Program.  The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work.  This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force.  You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
```

not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to
the covered work, and you disclaim any intention to limit operation or
modification of the work as a means of enforcing, against the work's
users, your or third parties' legal rights to forbid circumvention of
technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you
receive it, in any medium, provided that you conspicuously and
appropriately publish on each copy an appropriate copyright notice;
keep intact all notices stating that this License and any
non-permissive terms added in accord with section 7 apply to the code;
keep intact all notices of the absence of any warranty; and give all
recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey,
and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to
produce it from the Program, in the form of source code under the
terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified
    it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is
    released under this License and any conditions added under section
    7. This requirement modifies the requirement in section 4 to
    "keep intact all notices".

    c) You must license the entire work, as a whole, under this
    License to anyone who comes into possession of a copy. This
    License will therefore apply, along with any applicable section 7
    additional terms, to the whole of the work, and all its parts,
    regardless of how they are packaged. This License gives no
    permission to license the work in any other way, but it does not
    invalidate such permission if you have separately received it.

```
    d) If the work has interactive user interfaces, each must display
    Appropriate Legal Notices; however, if the Program has interactive
    interfaces that do not display Appropriate Legal Notices, your
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.
```

e) Convey the object code using peer-to-peer transmission, provided you inform other peers where the object code and Corresponding Source of the work are being offered to the general public at no charge under subsection 6d.

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions.

Additional permissions that are applicable to the entire Program shall
be treated as though they were included in this License, to the extent
that they are valid under applicable law. If additional permissions
apply only to part of the Program, that part may be used separately
under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may

not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are

specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

15. Disclaimer of Warranty.

THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. Limitation of Liability.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

17. Interpretation of Sections 15 and 16.

If the disclaimer of warranty and limitation of liability provided above cannot be given local legal effect according to their terms, reviewing courts shall apply local law that most closely approximates an absolute waiver of all civil liability in connection with the Program, unless a warranty or assumption of liability accompanies a copy of the Program in return for a fee.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

To do so, attach the following notices to the program. It is safest to attach them to the start of each source file to most effectively state the exclusion of warranty; and each file should have at least the "copyright" line and a pointer to where the full notice is found.

<one line to give the program's name and a brief idea of what it does.>
Copyright (C) <year> <name of author>

This program is free software: you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 3 of the License, or (at your option) any later version.

```
    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.87 tcl

```
tcl
------------------------------------------------------------------
tcl/doc/license.terms
------------------------------------------------------------------
This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties.  The following terms apply to all files
associated with the software unless explicitly disclaimed in
individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7014 (b) (3) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
------------------------------------------------------------------
tcl/doc/copy.n
------------------------------------------------------------------
'\"
'\" Copyright (c) 2007 Donal K. Fellows
'\"
'\" See the file "license.terms" for information on usage and redistribution
'\" of this file, and for a DISCLAIMER OF ALL WARRANTIES.
'\"
.TH copy n 0.1 TclOO "TclOO Commands"
.so man.macros
```

```
.BS
'\" Note:  do not modify the .SH NAME line immediately below!
.SH NAME
oo::copy \- create copies of objects and classes
.SH SYNOPSIS
.nf
package require TclOO

\fBoo::copy\fI sourceObject \fR?\fItargetObject\fR? ?\fItargetNamespace\fR?
.fi
.BE
.SH DESCRIPTION
.PP
The \fBoo::copy\fR command creates a copy of an object or class. It takes the
name of the object or class to be copied, \fIsourceObject\fR, and optionally
the name of the object or class to create, \fItargetObject\fR, which will be
resolved relative to the current namespace if not an absolute qualified name
and
.VS TIP473
\fItargetNamespace\fR which is the name of the namespace that will hold the
internal state of the object (\fBmy\fR command, etc.); it \fImust not\fR
refer to an existing namespace.
If either \fItargetObject\fR or \fItargetNamespace\fR is omitted or is given
as the empty string, a new name is chosen. Names, unless specified, are
chosen with the same algorithm used by the \fBnew\fR method of
\fBoo::class\fR.
.VE TIP473
The copied object will be of the same class as the source object, and will have
all its per-object methods copied. If it is a class, it will also have all the
class methods in the class copied, but it will not have any of its instances
copied.
.PP
.VS
After the \fItargetObject\fR has been created and all definitions of its
configuration (e.g., methods, filters, mixins) copied, the \fB<cloned>\fR
method of \fItargetObject\fR will be invoked, to allow for customization of
the created object such as installing related variable traces. The only
argument given will be \fIsourceObject\fR. The default implementation of this
method (in \fBoo::object\fR) just copies the procedures and variables in the
namespace of \fIsourceObject\fR to the namespace of \fItargetObject\fR. If
this method call does not return a result that is successful (i.e., an error
or other kind of exception) then the \fItargetObject\fR will be deleted and an
error returned.
.VE
.PP
The result of the \fBoo::copy\fR command will be the fully-qualified name of
the new object or class.
.SH EXAMPLES
.PP
This example creates an object, copies it, modifies the source object, and
then demonstrates that the copied object is indeed a copy.
.PP
.CS
oo::object create src
oo::objdefine src method msg {} {puts foo}
\fBoo::copy\fR src dst
oo::objdefine src method msg {} {puts bar}
src msg              \fI\(-> prints "bar"\fR
dst msg              \fI\(-> prints "foo"\fR
```

```
.CE
.SH "SEE ALSO"
oo::class(n), oo::define(n), oo::object(n)
.SH KEYWORDS
clone, copy, duplication, object
.\" Local variables:
.\" mode: nroff
.\" fill-column: 78
.\" End:
```

---

tcl/license.terms

```
This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties.  The following terms apply to all files
associated with the software unless explicitly disclaimed in
individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7014 (b) (3) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
```

---

tcl/macosx/license.terms

```
This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties.  The following terms apply to all files
associated with the software unless explicitly disclaimed in
```

individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7014 (b) (3) of DFARs. Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----
tcl/win/license.terms

This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties. The following terms apply to all files
associated with the software unless explicitly disclaimed in
individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE

```
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7014 (b) (3) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
-----------------------------------------------------------------
tcl/tests/license.terms
-----------------------------------------------------------------
This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties.  The following terms apply to all files
associated with the software unless explicitly disclaimed in
individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
```

252.227-7014 (b) (3) of DFARs. Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----
tcl/compat/license.terms

This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties. The following terms apply to all files
associated with the software unless explicitly disclaimed in
individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7014 (b) (3) of DFARs. Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----
tcl/compat/zlib/contrib/dotzlib/LICENSE_1_0.txt

Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

```
The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.----------------------------------------------------------------------
tcl/pkgs/tdbcpostgres1.0.6/license.terms
----------------------------------------------------------------
This software is copyrighted by Slawomir Cygan, and by other parties.
The following terms apply to all files associated with the software
unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----------------------------------------------------------------
tcl/pkgs/tdbc1.0.6/license.terms
----------------------------------------------------------------
This software is copyrighted by Kevin B. Kenny, and by other parties.
The following terms apply to all files associated with the software
```

```
unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
---------------------------------------------------------------------
tcl/pkgs/itcl4.1.1/doc/license.terms
---------------------------------------------------------------------
-------------------------------------------------------------------------
>>>>>>>>>>>>>>>>>>>>>>>>>>>> [incr Tcl] <<<<<<<<<<<<<<<<<<<<<<<<<<<<

 AUTHOR:  Michael J. McLennan
          Bell Labs Innovations for Lucent Technologies
          mmclennan@lucent.com
          http://www.tcltk.com/itcl
========================================================================
             Copyright (c) 1993-1996  Lucent Technologies
========================================================================
Permission to use, copy, modify, and distribute this software and its
documentation for any purpose and without fee is hereby granted,
provided that the above copyright notice appear in all copies and that
both that the copyright notice and warranty disclaimer appear in
supporting documentation, and that the names of Lucent Technologies
any of their entities not be used in advertising or publicity
pertaining to distribution of the software without specific, written
prior permission.

Lucent Technologies disclaims all warranties with regard to this
```

```
software, including all implied warranties of merchantability and
fitness.  In no event shall Lucent be liable for any special, indirect
or consequential damages or any damages whatsoever resulting from loss
of use, data or profits, whether in an action of contract, negligence
or other tortuous action, arising out of or in connection with the use
or performance of this software.
========================================================================
------------------------------------------------------------------
tcl/pkgs/itcl4.1.1/license.terms
------------------------------------------------------------------
This is a mostly rewritten version of [incr Tcl], which is copyrighted
by Arnulf P. Wiedemann (c) Copyright 2008. It is derived from a version
written by Lucent Technologies, Inc., and other parties see that copyright
below.

The rewritten version is copyrighted with BSD license or Public Domain at
your choice.

The original version of this software is copyrighted by Lucent Technologies,
Inc., and other parties. The following terms apply to all files associated
with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
------------------------------------------------------------------
tcl/pkgs/sqlite3.21.0/license.terms
------------------------------------------------------------------
```

```
The author disclaims copyright to this source code.  In place of
a legal notice, here is a blessing:

    May you do good and not evil.
    May you find forgiveness for yourself and forgive others.
    May you share freely, never taking more than you give.
----------------------------------------------------------------------
tcl/pkgs/tdbcodbc1.0.6/license.terms
----------------------------------------------------------------------
This software is copyrighted by Kevin B. Kenny, and by other parties.
The following terms apply to all files associated with the software
unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----------------------------------------------------------------------
tcl/pkgs/thread2.8.2/license.terms
----------------------------------------------------------------------
This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation,
and other parties.  The following terms apply to all files associated
with the software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
```

```
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
---------------------------------------------------------------------
tcl/pkgs/tdbcsqlite3-1.0.6/license.terms
---------------------------------------------------------------------
This software is copyrighted by the Scriptics Corporation, and other
parties.  The following terms apply to all files associated with the
software unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.
```

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----
tcl/pkgs/tdbcmysql1.0.6/license.terms

This software is copyrighted by Kevin B. Kenny, and by other parties.
The following terms apply to all files associated with the software
unless explicitly disclaimed in individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2). If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7013 (c) (1) of DFARs. Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
----
tcl/library/license.terms

This software is copyrighted by the Regents of the University of
California, Sun Microsystems, Inc., Scriptics Corporation, ActiveState
Corporation and other parties. The following terms apply to all files

```
associated with the software unless explicitly disclaimed in
individual files.

The authors hereby grant permission to use, copy, modify, distribute,
and license this software and its documentation for any purpose, provided
that existing copyright notices are retained in all copies and that this
notice is included verbatim in any distributions. No written agreement,
license, or royalty fee is required for any of the authorized uses.
Modifications to this software may be copyrighted by their authors
and need not follow the licensing terms described here, provided that
the new terms are clearly indicated on the first page of each file where
they apply.

IN NO EVENT SHALL THE AUTHORS OR DISTRIBUTORS BE LIABLE TO ANY PARTY
FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES
ARISING OUT OF THE USE OF THIS SOFTWARE, ITS DOCUMENTATION, OR ANY
DERIVATIVES THEREOF, EVEN IF THE AUTHORS HAVE BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGE.

THE AUTHORS AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY WARRANTIES,
INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT.  THIS SOFTWARE
IS PROVIDED ON AN "AS IS" BASIS, AND THE AUTHORS AND DISTRIBUTORS HAVE
NO OBLIGATION TO PROVIDE MAINTENANCE, SUPPORT, UPDATES, ENHANCEMENTS, OR
MODIFICATIONS.

GOVERNMENT USE: If you are acquiring this software on behalf of the
U.S. government, the Government shall have only "Restricted Rights"
in the software and related documentation as defined in the Federal
Acquisition Regulations (FARs) in Clause 52.227.19 (c) (2).  If you
are acquiring the software on behalf of the Department of Defense, the
software shall be classified as "Commercial Computer Software" and the
Government shall have only "Restricted Rights" as defined in Clause
252.227-7014 (b) (3) of DFARs.  Notwithstanding the foregoing, the
authors grant the U.S. Government and others acting in its behalf
permission to use and distribute the software in accordance with the
terms specified in this license.
```

3.88 tcpdump

```
tcpdump
-------------------------------------------------------------------
tcpdump/LICENSE
-------------------------------------------------------------------
License: BSD

Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:

  1. Redistributions of source code must retain the above copyright
     notice, this list of conditions and the following disclaimer.
  2. Redistributions in binary form must reproduce the above copyright
     notice, this list of conditions and the following disclaimer in
     the documentation and/or other materials provided with the
     distribution.
  3. The names of the authors may not be used to endorse or promote
     products derived from this software without specific prior
     written permission.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND WITHOUT ANY EXPRESS OR
IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED
WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
```

3.89 texinfo

```
texinfo
----------------------------------------------------------------------
texinfo/tp/maintain/lib/libintl-perl/COPYING.LESSER
----------------------------------------------------------------------

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
     59 Temple Place, Suite 330, Boston, MA  02111-1307  USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL.  It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it.  You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations
below.

  When we speak of free software, we are referring to freedom of use,
not price.  Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights.  These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you.  You must make sure that they, too, receive or can get the source
code.  If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it.  And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
```

permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.
^L
  Finally, software patents pose a constant threat to the existence of
any free program. We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder. Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it
becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

```
  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
"work based on the library" and a "work that uses the library".  The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.
^L
                  GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of
this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms.  A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language.  (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it.  For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control
compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it).  Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.


  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
```

above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,
    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.
^L
  Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

```
  This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library".  Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library".  The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library.  The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work.  (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.
^L
  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License.  You must supply a copy of this License.  If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
```

directing the user to the copy of this License. Also, you must do one
of these things:

    a) Accompany the work with the complete corresponding
    machine-readable source code for the Library including whatever
    changes were used in the work (which must be distributed under
    Sections 1 and 2 above); and, if the work is an executable linked
    with the Library, with the complete machine-readable "work that
    uses the Library", as object code and/or source code, so that the
    user can modify the Library and then relink to produce a modified
    executable containing the modified Library. (It is understood
    that the user who changes the contents of definitions files in the
    Library will not necessarily be able to recompile the application
    to use the modified definitions.)

    b) Use a suitable shared library mechanism for linking with the
    Library. A suitable mechanism is one that (1) uses at run time a
    copy of the library already present on the user's computer system,
    rather than copying library functions into the executable, and (2)
    will operate properly with a modified version of the library, if
    the user installs one, as long as the modified version is
    interface-compatible with the version that the work was made with.

    c) Accompany the work with a written offer, valid for at
    least three years, to give the same user the materials
    specified in Subsection 6a, above, for a charge no more
    than the cost of performing this distribution.

    d) If distribution of the work is made by offering access to copy
    from a designated place, offer equivalent access to copy the above
    specified materials from the same place.

    e) Verify that the user has already received a copy of these
    materials or that you have already sent this user a copy.

  For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

  It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.
^L
  7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

    a) Accompany the combined library with a copy of the same work
    based on the Library, uncombined with any other library

```
    facilities.  This must be distributed under the terms of the
    Sections above.

    b) Give prominent notice with the combined library of the fact
    that part of it is a work based on the Library, and explaining
    where to find the accompanying uncombined form of the same work.

  8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License.  Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your
rights under this License.  However, parties who have received copies,
or rights, from you under this License will not have their licenses
terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Library or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Library (or any work based on the
Library), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the
Library), the recipient automatically receives a license from the
original licensor to copy, distribute, link with or modify the Library
subject to these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties with
this License.
^L
  11. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Library at all.  For example, if a patent
license would not permit royalty-free redistribution of the Library by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply, and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system which is
implemented by public license practices.  Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
```

impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.
^L
  14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

```
^L
           How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms
of the ordinary General Public License).

  To apply these terms, attach the following notices to the library.
It is safest to attach them to the start of each source file to most
effectively convey the exclusion of warranty; and each file should
have at least the "copyright" line and a pointer to where the full
notice is found.


    <one line to give the library's name and a brief idea of what it
does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 59 Temple Place, Suite 330, Boston, MA 02111-1307  USA

Also add information on how to contact you by electronic and paper
mail.

You should also get your employer (if you work as a programmer) or
your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James
Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!


---------------------------------------------------------------------
texinfo/tp/t/results/regions/copying_not_closed.pl
---------------------------------------------------------------------
use vars qw(%result_texis %result_texts %result_trees %result_errors
   %result_indices %result_sectioning %result_nodes %result_menus
   %result_floats %result_converted %result_converted_errors
   %result_elements %result_directions_text);
```

```
use utf8;

$result_trees{'copying_not_closed'} = {
  'contents' => [
    {
      'cmdname' => 'copying',
      'contents' => [
        {
          'extra' => {
            'command' => {}
          },
          'parent' => {},
          'text' => '
',
          'type' => 'empty_line_after_command'
        },
        {
          'parent' => {},
          'text' => '
',
          'type' => 'empty_line'
        },
        {
          'contents' => [
            {
              'parent' => {},
              'text' => 'This is a copyright notice
'
            }
          ],
          'parent' => {},
          'type' => 'paragraph'
        }
      ],
      'extra' => {
        'spaces_after_command' => {}
      },
      'line_nr' => {
        'file_name' => '',
        'line_nr' => 1,
        'macro' => ''
      },
      'parent' => {}
    }
  ],
  'type' => 'text_root'
};
$result_trees{'copying_not_closed'}{'contents'}[0]{'contents'}[0]{'extra'}{'command'} = $result_trees{'copying_
$result_trees{'copying_not_closed'}{'contents'}[0]{'contents'}[0]{'parent'} = $result_trees{'copying_not_closed
$result_trees{'copying_not_closed'}{'contents'}[0]{'contents'}[1]{'parent'} = $result_trees{'copying_not_closed
$result_trees{'copying_not_closed'}{'contents'}[0]{'contents'}[2]{'contents'}[0]{'parent'} = $result_trees{'cop
$result_trees{'copying_not_closed'}{'contents'}[0]{'contents'}[2]{'parent'} = $result_trees{'copying_not_closed
$result_trees{'copying_not_closed'}{'contents'}[0]{'extra'}{'spaces_after_command'} = $result_trees{'copying_no
$result_trees{'copying_not_closed'}{'contents'}[0]{'parent'} = $result_trees{'copying_not_closed'};

$result_texis{'copying_not_closed'} = '@copying

This is a copyright notice
```

```
';


$result_texts{'copying_not_closed'} = '';

$result_errors{'copying_not_closed'} = [
  {
    'error_line' => ':3: no matching `@end copying\'
',
    'file_name' => '',
    'line_nr' => 3,
    'macro' => '',
    'text' => 'no matching `@end copying\'',
    'type' => 'error'
  }
];


1;
----------------------------------------------------------------------
texinfo/tp/tests/formatting/res_parser/float_copying/Copying-and-floats.html
----------------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--
Copyright notice, public domain

Public domain is not really a licence, as it means than
the author abandon his copyright.
 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and floats (Top)</title>

<meta name="description" content="Appendix A Copying and floats (Top)">
<meta name="keywords" content="Appendix A Copying and floats (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
```

```
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-floats"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="index.html#Top" title="Beginning of this chapter or previous cha
<td valign="middle" align="left">[<a href="index.html#Top" title="Previous section in reading order"> &lt; </a>
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</td>
<td valign="middle" align="left">[Contents]</td>
<td valign="middle" align="left">[<a href="#Copying-and-floats" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="float_copying_abt.html#SEC_About" title="About (help)"> ? </a>]</td>
</tr></table>
<a name="Copying-and-floats-1"></a>
<h1 class="appendix">Appendix A Copying and floats</h1>

<p>In the appendix, we print the references and the copying once more
and the list of coyright notices (listoffloats).
</p>
<p>See the caption <a href="index.html#public-domain-anchor">public domain anchor</a>.
</p>
<p>See the float <a href="index.html#public-domain">Copyright notice 1</a>.
</p>
<a name="index-listofloats"></a>


<div class="float"><a name="public-domain"></a>

<p>Public domain is not really a licence, as it means than
the author abandon his copyright.
</p>
<div class="float-caption"><p><strong>Copyright notice 1: </strong>The Public Domain notice<a name="DOCF1_2" hr
</p>
<a name="public-domain-anchor"></a><a name="index-copying-indexed-caption"></a>
<a name="index-copying-indexed-caption-function"></a>
</div></div>

<div class="float"><a name="public-domain"></a>

<p>Public domain is not really a licence, as it means than
the author abandon his copyright.
</p>
<div class="float-caption"><p><strong>Copyright notice 1: </strong>The Public Domain notice<a name="DOCF1_3" hr
```

```
</p>
<a name="public-domain-anchor"></a><a name="index-copying-indexed-caption"></a>
<a name="index-copying-indexed-caption-function"></a>
</div></div>

<a name="listoffloats"></a>
<h3 class="subheading">listoffloats</h3>
<dl class="listoffloats">
<dt><a href="index.html#public-domain">Copyright notice 1</a></dt><dd><p>The Public Domain notice<a na
</p>
</dd>
</dl>

<a name="printindex"></a>
<h3 class="subheading">printindex</h3>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-floa
  
<a class="summary-letter" href="#Copying-and-floats-1_cp_letter-L"><b>L</b></a>
  
<a class="summary-letter" href="#Copying-and-floats-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-floats-1_cp_letter-I">I</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-copying-indexed-caption">indexed caption</a></
<tr><td></td><td valign="top"><a href="float_copying_fot.html#index-copying-indexed-caption-copying-fo
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-floats-1_cp_letter-L">L</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-listofloats">listofloats</a></td><td> </td><td vali
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-floats-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-Top">Top</a></td><td> </td><td valign="to
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-floa
  
<a class="summary-letter" href="#Copying-and-floats-1_cp_letter-L"><b>L</b></a>
  
<a class="summary-letter" href="#Copying-and-floats-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-floa
  
<a class="summary-letter" href="#Copying-and-floats-1_fn_letter-P"><b>P</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-floats-1_fn_letter-I">I</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-copying-indexed-caption-function"><code>indexe
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-floats-1_fn_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="float_copying_fot.html#index-copying-public-domain-function"><c
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-floa
```

```
  
<a class="summary-letter" href="#Copying-and-floats-1_fn_letter-P"><b>P</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="index.html#Top" title="Beginning of this chapter or previous cha
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</td>
<td valign="middle" align="left">[Contents]</td>
<td valign="middle" align="left">[<a href="#Copying-and-floats" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="float_copying_abt.html#SEC_About" title="About (help)"> ? </a>]</td>
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texinfo/"><em>
</font></p>


</body>
</html>
----------------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_html/Copying-and-indices.html
----------------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and indices (Top)</title>

<meta name="description" content="Appendix A Copying and indices (Top)">
<meta name="keywords" content="Appendix A Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
```

```
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Previous section in reading or
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_toc.html#SEC_Contents" title="Table of
<td valign="middle" align="left">[<a href="index.html#Top" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_abt.html#SEC_About" title="About (help
</tr></table>
<a name="Copying-and-indices-1"></a>
<h1 class="appendix">Appendix A Copying and indices</h1>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index_special_region_fot.html#Public-domain-reference">Public domain reference</a> for refere
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index_special_region_fot.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for re
</p>

<a name="index-copying-Copying-this-document"></a>
<a name="Copying-information"></a>
<p>This is a test manual, trivially and explicitly in the public
domain<a name="DOCF1_4" href="index_special_region_fot.html#FOOT1_4"><sup>4</sup></a>.
</p>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
```

```
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-copying-Public-domain">Public domain
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-titlepage-Titlepage-footnote">Titlep
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a></td><td>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
```


```
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-copying-Public-domain">Public domain
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-titlepage-Titlepage-footnote">Titlep
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a></td><td>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
```

```
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-A">A</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a></td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-F">F</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="Chapter.html#index-findex-entry"><code>findex entry</code></a><
<tr><td></td><td valign="top"><a href="Chapter.html#index-fun"><code>fun</code></a></td><td> </td
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_toc.html#SEC_Contents" title="Table of
<td valign="middle" align="left">[<a href="index.html#Top" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_abt.html#SEC_About" title="About (help
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texin
</font></p>


</body>
</html>
-----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_html/Copying-information.html
-----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<!-- This file redirects to the location of a node or anchor -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying information (Top)</title>
```

```
<meta name="description" content="Copying information (Top)">
<meta name="keywords" content="Copying information (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>

<meta http-equiv="Refresh" content="0; url=index.html#Copying-information">

</head>

<body lang="en">

<p>The node you are looking for is at <a href="index.html#Copying-information">Copying information</a>.</p>
</body>
----------------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region/Copying-and-indices.html
----------------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and indices (Top)</title>

<meta name="description" content="Appendix A Copying and indices (Top)">
```

```
<meta name="keywords" content="Appendix A Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Previous section in reading or
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_toc.html#SEC_Contents" title="Table of
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_abt.html#SEC_About" title="About (help
</tr></table>
<a name="Copying-and-indices-1"></a>
<h1 class="appendix">Appendix A Copying and indices</h1>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>
```

```
<a name="index-Copying-appendix"></a>

<p><a href="Chapter.html#Copying-information">Copying information</a> for the copying information.
<a href="index_special_region_fot.html#Public-domain-reference">Public domain reference</a> for reference on th
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index_special_region_fot.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for reference c
</p>

<a name="index-copying-Copying-this-document"></a>
<a name="Copying-information"></a>
<p>This is a test manual, trivially and explicitly in the public
domain<a name="DOCF1_2" href="index_special_region_fot.html#FOOT1_2"><sup>2</sup></a>.
</p>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="Chapter.html#index-copying-Copying-this-document">Copying this document<
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-copying-Public-domain">Public domain
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-titlepage-Titlepage-footnote">Titlep
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a></td><td>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>



<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="Chapter.html#index-copying-Copying-this-document">Copying this document<
```

```
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-copying-Public-domain">Publ
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_fot.html#index-titlepage-Titlepage-footnot
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-A">A</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a></td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-F">F</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="Chapter.html#index-findex-entry"><code>findex entry</code></a><
<tr><td></td><td valign="top"><a href="Chapter.html#index-fun"><code>fun</code></a></td><td> </td
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_toc.html#SEC_Contents" title="Table of
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_abt.html#SEC_About" title="About (help
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texin
</font></p>


</body>
</html>
```

```
----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region/Copying-information.html
----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<!-- This file redirects to the location of a node or anchor -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying information (Top)</title>

<meta name="description" content="Copying information (Top)">
<meta name="keywords" content="Copying information (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>

<meta http-equiv="Refresh" content="0; url=Chapter.html#Copying-information">

</head>

<body lang="en">

<p>The node you are looking for is at <a href="Chapter.html#Copying-information">Copying information</a>.</p>
</body>
----------------------------------------------------------------
```

```
texinfo/tp/tests/indices/res_parser/index_special_region_no_region_html/Copying-and-indices.html
-----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and indices (Top)</title>

<meta name="description" content="Appendix A Copying and indices (Top)">
<meta name="keywords" content="Appendix A Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Previous section in reading or
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
```

```
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_region_toc.html#SEC_Contents" title="Table o
<td valign="middle" align="left">[<a href="index.html#Top" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_region_abt.html#SEC_About" title="About (hel
</tr></table>
<a name="Copying-and-indices-1"></a>
<h1 class="appendix">Appendix A Copying and indices</h1>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index_special_region_no_region_fot.html#Public-domain-reference">Public domain reference</a> for refer
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index_special_region_no_region_fot.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for r
</p>

<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_region_fot.html#index-copying-Public-domain">Pub
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_region_fot.html#index-titlepage-Titlepage-footno
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a></td><td>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_fn_
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
```

```
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-A">A</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a></td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-F">F</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="Chapter.html#index-findex-entry"><code>findex entry</code></a><
<tr><td></td><td valign="top"><a href="Chapter.html#index-fun"><code>fun</code></a></td><td> </td
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_no_region_toc.html#SEC_Contents" title
<td valign="middle" align="left">[<a href="index.html#Top" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_region_abt.html#SEC_About" title="A
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texin
</font></p>


</body>
</html>
-----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_no_region_html/Copying-information.html
-----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<!-- This file redirects to the location of a node or anchor -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying information (Top)</title>

<meta name="description" content="Copying information (Top)">
<meta name="keywords" content="Copying information (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
```

```
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>

<meta http-equiv="Refresh" content="0; url=index.html#Copying-information">

</head>

<body lang="en">

<p>The node you are looking for is at <a href="index.html#Copying-information">Copying information</a>.</p>
</body>
----------------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_no_insertcopying/Copying-and-indices.html
----------------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and indices (Top)</title>

<meta name="description" content="Appendix A Copying and indices (Top)">
<meta name="keywords" content="Appendix A Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
```

```
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Previous section in reading or
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_toc.html#SEC_Contents
<td valign="middle" align="left">[Index]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_abt.html#SEC_About" t
</tr></table>
<a name="Copying-and-indices-1"></a>
<h1 class="appendix">Appendix A Copying and indices</h1>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index_special_region_no_insertcopying_fot.html#Public-domain-reference">Public domain referen
</p>
```

```
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index_special_region_no_insertcopying_fot.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a
</p>

<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_insertcopying_fot.html#index-copying-Public-doma
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_insertcopying_fot.html#index-titlepage-Titlepage
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a></td><td>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_fn_
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-A">A</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a></td><td> </td><td
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-F">F</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="Chapter.html#index-findex-entry"><code>findex entry</code></a></td><td>&
<tr><td></td><td valign="top"><a href="Chapter.html#index-fun"><code>fun</code></a></td><td> </td><td vali
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_fn_
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter or previo
<td valign="middle" align="left">[ &gt;&gt; ]</td>
```

```
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_toc.html#SEC_Contents
<td valign="middle" align="left">[Index]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_abt.html#SEC_About" t
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texin
</font></p>


</body>
</html>
-----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_no_insertcopying_html/Copying-and-indices.htm
-----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and indices (Top)</title>

<meta name="description" content="Appendix A Copying and indices (Top)">
<meta name="keywords" content="Appendix A Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
```

```
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter or previo
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Previous section in reading order"> &lt
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_toc.html#SEC_Contents" title="
<td valign="middle" align="left">[<a href="index.html#Top" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_abt.html#SEC_About" title="Abo
</tr></table>
<a name="Copying-and-indices-1"></a>
<h1 class="appendix">Appendix A Copying and indices</h1>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index_special_region_no_insertcopying_fot.html#Public-domain-reference">Public domain reference</a> fo
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index_special_region_no_insertcopying_fot.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a
</p>

<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_insertcopying_fot.html#index-copying-Public-doma
```

```
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_insertcopying_fot.html#index-titlepage-
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-A">A</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a></td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-F">F</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="Chapter.html#index-findex-entry"><code>findex entry</code></a><
<tr><td></td><td valign="top"><a href="Chapter.html#index-fun"><code>fun</code></a></td><td> </td
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_toc.html#SEC_Contents
<td valign="middle" align="left">[<a href="index.html#Top" title="Index">Index</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_insertcopying_abt.html#SEC_About" t
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texin
</font></p>


</body>
</html>
-----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_no_insertcopying_html/Copying-information.htm
-----------------------------------------------------------------
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<!-- This file redirects to the location of a node or anchor -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying information (Top)</title>

<meta name="description" content="Copying information (Top)">
<meta name="keywords" content="Copying information (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>

<meta http-equiv="Refresh" content="0; url=index.html#Copying-information">

</head>

<body lang="en">

<p>The node you are looking for is at <a href="index.html#Copying-information">Copying information</a>.</p>
</body>
----------------------------------------------------------------------
texinfo/tp/tests/indices/res_parser/index_special_region_no_region/Copying-and-indices.html
----------------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Appendix A Copying and indices (Top)</title>

<meta name="description" content="Appendix A Copying and indices (Top)">
<meta name="keywords" content="Appendix A Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Previous section in reading or
<td valign="middle" align="left">[<a href="index.html#Top" title="Up section"> Up </a>]</td>
<td valign="middle" align="left">[ &gt; ]</td>
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
```

```
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_region_toc.html#SEC_Contents" title="Table o
<td valign="middle" align="left">[Index]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_region_abt.html#SEC_About" title="About (hel
</tr></table>
<a name="Copying-and-indices-1"></a>
<h1 class="appendix">Appendix A Copying and indices</h1>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index_special_region_no_region_fot.html#Public-domain-reference">Public domain reference</a> for refer
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index_special_region_no_region_fot.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for r
</p>

<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a></td><td> </td><td val
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_region_fot.html#index-copying-Public-domain">Pub
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index_special_region_no_region_fot.html#index-titlepage-Titlepage-footno
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a></td><td>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_cp_
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices-1_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices-1_fn_
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
```

```
<tr><th><a name="Copying-and-indices-1_fn_letter-A">A</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a></td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices-1_fn_letter-F">F</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="Chapter.html#index-findex-entry"><code>findex entry</code></a><
<tr><td></td><td valign="top"><a href="Chapter.html#index-fun"><code>fun</code></a></td><td> </td
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices-1_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<hr>
<table class="header" cellpadding="1" cellspacing="1" border="0">
<tr><td valign="middle" align="left">[<a href="Chapter.html#Chapter" title="Beginning of this chapter
<td valign="middle" align="left">[ &gt;&gt; ]</td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">   </td>
<td valign="middle" align="left">[<a href="index.html#Top" title="Cover (top) of document">Top</a>]</t
<td valign="middle" align="left">[<a href="index_special_region_no_region_toc.html#SEC_Contents" title
<td valign="middle" align="left">[Index]</td>
<td valign="middle" align="left">[<a href="index_special_region_no_region_abt.html#SEC_About" title="A
</tr></table>
<p><font size="-1">
  This document was generated on <em>a sunny day</em> using <a href="http://www.gnu.org/software/texin
</font></p>


</body>
</html>
-----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser_info/index_special_region_html/Copying-and-indices.html
-----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying and indices (Top)</title>

<meta name="description" content="Copying and indices (Top)">
<meta name="keywords" content="Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<link href="index.html#Top" rel="start" title="Top">
<link href="index.html#Top" rel="index" title="Top">
<link href="#SEC_Contents" rel="contents" title="Table of Contents">
```

```
<link href="index.html#Top" rel="up" title="Top">
<link href="index.html#Top" rel="prev" title="Top">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<div class="header">
<p>
Previous: <a href="index.html#Top" accesskey="p" rel="prev">Top</a>, Up: <a href="index.html#Top" accesskey="u"
</div>
<a name="Copying-and-indices-1"></a>
<h2 class="appendix">Appendix A Copying and indices</h2>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index.html#Public-domain-reference">Public domain reference</a> for reference on the licence.
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for reference on the titlepage.
</p>

<a name="index-copying-Copying-this-document"></a>
<a name="Copying-information"></a>
<p>This is a test manual, trivially and explicitly in the public
domain<a name="DOCF1_2" href="#FOOT1_2"><sup>2</sup></a>.
```

```
</p>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-C">C</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a>:</td><td> </
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this do
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-P">P</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-copying-Public-domain">Public domain</a>:</td>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-T">T</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-footnote">Titlepage footno
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>



<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-C">C</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a>:</td><td> </
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this do
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-P">P</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-copying-Public-domain">Public domain</a>:</td>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-T">T</a></th><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-footnote">Titlepage footno
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
```

```
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices_fn_le
  
<a class="summary-letter" href="#Copying-and-indices_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_fn_letter-A">A</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a>:</td><td> </td><td
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_fn_letter-F">F</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-findex-entry"><code>findex entry</code></a>:</td><td>&n
<tr><td></td><td valign="top"><a href="index.html#index-fun"><code>fun</code></a>:</td><td> </td><td valig
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices_fn_le
  
<a class="summary-letter" href="#Copying-and-indices_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<a name="SEC_Contents"></a>
<h2 class="contents-heading">Table of Contents</h2>

<div class="contents">

<ul class="no-bullet">
  <li><a name="toc-Chapter" href="index.html#Chapter">1 Chapter</a></li>
  <li><a name="toc-Copying-and-indices-1" href="#Copying-and-indices">Appendix A Copying and indices</a></li>
</ul>
</div>

<div class="footnote">
<hr>
<h4 class="footnotes-heading">Footnotes</h4>

<h3><a name="FOOT1_2" href="#DOCF1_2">(2)</a></h3>
<a name="Public-domain-reference"></a><p>The public
domain is something you should allready know
</p>
<a name="index-copying-Public-domain"></a>
</div>
<hr>
<div class="header">
<p>
Previous: <a href="index.html#Top" accesskey="p" rel="prev">Top</a>, Up: <a href="index.html#Top" accesskey="u"
</div>



</body>
</html>
----------------------------------------------------------------------
texinfo/tp/tests/indices/res_parser_info/index_special_region_html/Copying-information.html
----------------------------------------------------------------------
```

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<!-- This file redirects to the location of a node or anchor -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying information (Top)</title>

<meta name="description" content="Copying information (Top)">
<meta name="keywords" content="Copying information (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>

<meta http-equiv="Refresh" content="0; url=index.html#Copying-information">

</head>

<body lang="en">

<p>The node you are looking for is at <a href="index.html#Copying-information">Copying information</a>
</body>
----------------------------------------------------------------
texinfo/tp/tests/indices/res_parser_info/index_special_region_no_region_html/Copying-and-indices.html
----------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying and indices (Top)</title>

<meta name="description" content="Copying and indices (Top)">
<meta name="keywords" content="Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<link href="index.html#Top" rel="start" title="Top">
<link href="#SEC_Contents" rel="contents" title="Table of Contents">
<link href="index.html#Top" rel="up" title="Top">
<link href="index.html#Top" rel="prev" title="Top">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<div class="header">
<p>
Previous: <a href="index.html#Top" accesskey="p" rel="prev">Top</a>, Up: <a href="index.html#Top" accesskey="u"
</div>
<a name="Copying-and-indices-1"></a>
```

```
<h2 class="appendix">Appendix A Copying and indices</h2>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index.html#Public-domain-reference">Public domain reference</a> for reference on the licence.
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for reference on the titl
</p>

<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a>:</td><td> </
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this do
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-copying-Public-domain">Public domain</a>:</td>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-footnote">Titlepage footno
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a>
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_fn_letter-A">A</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a>:</td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_fn_letter-F">F</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-findex-entry"><code>findex entry</code></a>:</
<tr><td></td><td valign="top"><a href="index.html#index-fun"><code>fun</code></a>:</td><td> </td>
<tr><td colspan="4"> <hr></td></tr>
```

```
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices_fn_le
  
<a class="summary-letter" href="#Copying-and-indices_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<a name="SEC_Contents"></a>
<h2 class="contents-heading">Table of Contents</h2>

<div class="contents">

<ul class="no-bullet">
  <li><a name="toc-Chapter" href="index.html#Chapter">1 Chapter</a></li>
  <li><a name="toc-Copying-and-indices-1" href="#Copying-and-indices">Appendix A Copying and indices</a></li>
</ul>
</div>

<hr>
<div class="header">
<p>
Previous: <a href="index.html#Top" accesskey="p" rel="prev">Top</a>, Up: <a href="index.html#Top" accesskey="u"
</div>



</body>
</html>
----------------------------------------------------------------------
texinfo/tp/tests/indices/res_parser_info/index_special_region_no_insertcopying_html/Copying-and-indices.html
----------------------------------------------------------------------
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
<html>
<!--

This is a test manual, trivially and explicitly in the public
domain.

 -->
<!-- Created by texinfo, http://www.gnu.org/software/texinfo/ -->
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<title>Copying and indices (Top)</title>

<meta name="description" content="Copying and indices (Top)">
<meta name="keywords" content="Copying and indices (Top)">
<meta name="resource-type" content="document">
<meta name="distribution" content="global">
<meta name="Generator" content="texi2any">
<link href="index.html#Top" rel="start" title="Top">
<link href="#SEC_Contents" rel="contents" title="Table of Contents">
<link href="index.html#Top" rel="up" title="Top">
<link href="index.html#Top" rel="prev" title="Top">
<style type="text/css">
<!--
a.summary-letter {text-decoration: none}
blockquote.indentedblock {margin-right: 0em}
blockquote.smallindentedblock {margin-right: 0em; font-size: smaller}
blockquote.smallquotation {font-size: smaller}
```

```
div.display {margin-left: 3.2em}
div.example {margin-left: 3.2em}
div.lisp {margin-left: 3.2em}
div.smalldisplay {margin-left: 3.2em}
div.smallexample {margin-left: 3.2em}
div.smalllisp {margin-left: 3.2em}
kbd {font-style: oblique}
pre.display {font-family: inherit}
pre.format {font-family: inherit}
pre.menu-comment {font-family: serif}
pre.menu-preformatted {font-family: serif}
pre.smalldisplay {font-family: inherit; font-size: smaller}
pre.smallexample {font-size: smaller}
pre.smallformat {font-family: inherit; font-size: smaller}
pre.smalllisp {font-size: smaller}
span.nolinebreak {white-space: nowrap}
span.roman {font-family: initial; font-weight: normal}
span.sansserif {font-family: sans-serif; font-weight: normal}
ul.no-bullet {list-style: none}
-->
</style>


</head>

<body lang="en">
<a name="Copying-and-indices"></a>
<div class="header">
<p>
Previous: <a href="index.html#Top" accesskey="p" rel="prev">Top</a>, Up: <a href="index.html#Top" acce
</div>
<a name="Copying-and-indices-1"></a>
<h2 class="appendix">Appendix A Copying and indices</h2>

<p>In the appendix, we print the indices and references.
</p>
<a name="index-another-fun"></a>

<a name="index-Copying-appendix"></a>

<p><a href="index.html#Copying-information">Copying information</a> for the copying information.
<a href="index.html#Public-domain-reference">Public domain reference</a> for reference on the licence.
</p>
<p><a href="index.html#Titlepage-anchor">Titlepage anchor</a> for the titlepage.
<a href="index.html#Titlepage-footnote-anchor">Titlepage footnote anchor</a> for reference on the titl
</p>

<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indi
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table class="index-cp" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-C">C</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-Copying-appendix">Copying appendix</a>:</td><td> </
```

```
<tr><td></td><td valign="top"><a href="index.html#index-copying-Copying-this-document">Copying this document</a
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-P">P</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-copying-Public-domain">Public domain</a>:</td><td> 
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_cp_letter-T">T</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-footnote">Titlepage footnote</a>:</
<tr><td></td><td valign="top"><a href="index.html#index-titlepage-Titlepage-index">Titlepage index</a>:</td><td
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices_cp_le
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-P"><b>P</b></a>
  
<a class="summary-letter" href="#Copying-and-indices_cp_letter-T"><b>T</b></a>
  
</td></tr></table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices_fn_le
  
<a class="summary-letter" href="#Copying-and-indices_fn_letter-F"><b>F</b></a>
  
</td></tr></table>
<table class="index-fn" border="0">
<tr><td></td><th align="left">Index Entry</th><td> </td><th align="left"> Section</th></tr>
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_fn_letter-A">A</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="#index-another-fun"><code>another fun</code></a>:</td><td> </td><td
<tr><td colspan="4"> <hr></td></tr>
<tr><th><a name="Copying-and-indices_fn_letter-F">F</a></th><td></td><td></td><td></td></tr>
<tr><td></td><td valign="top"><a href="index.html#index-findex-entry"><code>findex entry</code></a>:</td><td>&n
<tr><td></td><td valign="top"><a href="index.html#index-fun"><code>fun</code></a>:</td><td> </td><td valig
<tr><td colspan="4"> <hr></td></tr>
</table>
<table><tr><th valign="top">Jump to:   </th><td><a class="summary-letter" href="#Copying-and-indices_fn_le
  
<a class="summary-letter" href="#Copying-and-indices_fn_letter-F"><b>F</b></a>
  
</td></tr></table>

<a name="SEC_Contents"></a>
<h2 class="contents-heading">Table of Contents</h2>

<div class="contents">

<ul class="no-bullet">
  <li><a name="toc-Chapter" href="index.html#Chapter">1 Chapter</a></li>
  <li><a name="toc-Copying-and-indices-1" href="#Copying-and-indices">Appendix A Copying and indices</a></li>
</ul>
</div>

<hr>
<div class="header">
<p>
Previous: <a href="index.html#Top" accesskey="p" rel="prev">Top</a>, Up: <a href="index.html#Top" accesskey="u"
</div>



</body>
```

```
</html>
-----------------------------------------------------------------
texinfo/COPYING
-----------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.

  The licenses for most software and other practical works are designed
to take away your freedom to share and change the works.  By contrast,
the GNU General Public License is intended to guarantee your freedom to
share and change all versions of a program--to make sure it remains free
software for all its users.  We, the Free Software Foundation, use the
GNU General Public License for most of our software; it applies also to
any other work released this way by its authors.  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
them if you wish), that you receive source code or can get it if you
want it, that you can change the software or use pieces of it in new
free programs, and that you know you can do these things.

  To protect your rights, we need to prevent others from denying you
these rights or asking you to surrender the rights.  Therefore, you have
certain responsibilities if you distribute copies of the software, or if
you modify it: responsibilities to respect the freedom of others.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must pass on to the recipients the same
freedoms that you received.  You must make sure that they, too, receive
or can get the source code.  And you must show them these terms so they
know their rights.

  Developers that use the GNU GPL protect your rights with two steps:
(1) assert copyright on the software, and (2) offer you this License
giving you legal permission to copy, distribute and/or modify it.

  For the developers' and authors' protection, the GPL clearly explains
that there is no warranty for this free software.  For both users' and
authors' sake, the GPL requires that modified versions be marked as
changed, so that their problems will not be attributed erroneously to
authors of previous versions.

  Some devices are designed to deny users access to install or run
modified versions of the software inside them, although the manufacturer
can do so.  This is fundamentally incompatible with the aim of
protecting users' freedom to change the software.  The systematic
pattern of such abuse occurs in the area of products for individuals to
use, which is precisely where it is most unacceptable.  Therefore, we
```

have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

0. Definitions.

"This License" refers to version 3 of the GNU General Public License.

"Copyright" also means copyright-like laws that apply to other kinds of works, such as semiconductor masks.

"The Program" refers to any copyrightable work licensed under this License. Each licensee is addressed as "you". "Licensees" and "recipients" may be individuals or organizations.

To "modify" a work means to copy from or adapt all or part of the work in a fashion requiring copyright permission, other than the making of an exact copy. The resulting work is called a "modified version" of the earlier work or a work "based on" the earlier work.

A "covered work" means either the unmodified Program or a work based on the Program.

To "propagate" a work means to do anything with it that, without permission, would make you directly or secondarily liable for infringement under applicable copyright law, except executing it on a computer or modifying a private copy. Propagation includes copying, distribution (with or without modification), making available to the public, and in some countries other activities as well.

To "convey" a work means any kind of propagation that enables other parties to make or receive copies. Mere interaction with a user through a computer network, with no transfer of a copy, is not conveying.

An interactive user interface displays "Appropriate Legal Notices" to the extent that it includes a convenient and prominently visible feature that (1) displays an appropriate copyright notice, and (2) tells the user that there is no warranty for the work (except to the extent that warranties are provided), that licensees may convey the work under this License, and how to view a copy of this License. If the interface presents a list of user commands or options, such as a menu, a prominent item in the list meets this criterion.

1. Source Code.

The "source code" for a work means the preferred form of the work

for making modifications to it. "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form. A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

Conveying under any other circumstances is permitted solely under the conditions stated below. Sublicensing is not allowed; section 10 makes it unnecessary.

3. Protecting Users' Legal Rights From Anti-Circumvention Law.

No covered work shall be deemed part of an effective technological measure under any applicable law fulfilling obligations under article 11 of the WIPO copyright treaty adopted on 20 December 1996, or similar laws prohibiting or restricting circumvention of such measures.

When you convey a covered work, you waive any legal power to forbid circumvention of technological measures to the extent such circumvention is effected by exercising rights under this License with respect to the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

4. Conveying Verbatim Copies.

You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

5. Conveying Modified Source Versions.

You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your

```
    work need not make them do so.

  A compilation of a covered work with other separate and independent
works, which are not by their nature extensions of the covered work,
and which are not combined with it such as to form a larger program,
in or on a volume of a storage or distribution medium, is called an
"aggregate" if the compilation and its resulting copyright are not
used to limit the access or legal rights of the compilation's users
beyond what the individual works permit.  Inclusion of a covered work
in an aggregate does not cause this License to apply to the other
parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms
of sections 4 and 5, provided that you also convey the
machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source.  This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge.  You need not require recipients to copy the
    Corresponding Source along with the object code.  If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source.  Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.
```

A separable portion of the object code, whose source code is excluded from the Corresponding Source as a System Library, need not be included in conveying the object code work.

A "User Product" is either (1) a "consumer product", which means any tangible personal property which is normally used for personal, family, or household purposes, or (2) anything designed or sold for incorporation into a dwelling. In determining whether a product is a consumer product, doubtful cases shall be resolved in favor of coverage. For a particular product received by a particular user, "normally used" refers to a typical or common use of that class of product, regardless of the status of the particular user or of the way in which the particular user actually uses, or expects or is expected to use, the product. A product is a consumer product regardless of whether the product has substantial commercial, industrial or non-consumer uses, unless such uses represent the only significant mode of use of the product.

"Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

7. Additional Terms.

"Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately

under those permissions, but the entire Program remains governed by
this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option
remove any additional permissions from that copy, or from any part of
it. (Additional permissions may be written to require their own
removal in certain cases when you modify the work.) You may place
additional permissions on material, added by you to a covered work,
for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you
add to a covered work, you may (if authorized by the copyright holders of
that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the
    terms of sections 15 and 16 of this License; or

    b) Requiring preservation of specified reasonable legal notices or
    author attributions in that material or in the Appropriate Legal
    Notices displayed by works containing it; or

    c) Prohibiting misrepresentation of the origin of that material, or
    requiring that modified versions of such material be marked in
    reasonable ways as different from the original version; or

    d) Limiting the use for publicity purposes of names of licensors or
    authors of the material; or

    e) Declining to grant rights under trademark law for use of some
    trade names, trademarks, or service marks; or

    f) Requiring indemnification of licensors and authors of that
    material by anyone who conveys the material (or modified versions of
    it) with contractual assumptions of liability to the recipient, for
    any liability that these contractual assumptions directly impose on
    those licensors and authors.

  All other non-permissive additional terms are considered "further
restrictions" within the meaning of section 10. If the Program as you
received it, or any part of it, contains a notice stating that it is
governed by this License along with a term that is a further
restriction, you may remove that term. If a license document contains
a further restriction but permits relicensing or conveying under this
License, you may add to a covered work material governed by the terms
of that license document, provided that the further restriction does
not survive such relicensing or conveying.

  If you add terms to a covered work in accord with this section, you
must place, in the relevant source files, a statement of the
additional terms that apply to those files, or a notice indicating
where to find the applicable terms.

  Additional terms, permissive or non-permissive, may be stated in the
form of a separately written license, or stated as exceptions;
the above requirements apply either way.

  8. Termination.

  You may not propagate or modify a covered work except as expressly

provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

  However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

  Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

  Termination of your rights under this section does not terminate the licenses of parties who have received copies or rights from you under this License. If your rights have been terminated and not permanently reinstated, you do not qualify to receive new licenses for the same material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or run a copy of the Program. Ancillary propagation of a covered work occurring solely as a consequence of using peer-to-peer transmission to receive a copy likewise does not require acceptance. However, nothing other than this License grants you permission to propagate or modify any covered work. These actions infringe copyright if you do not accept this License. Therefore, by modifying or propagating a covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically receives a license from the original licensors, to run, modify and propagate that work, subject to this License. You are not responsible for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an organization, or substantially all assets of one, or subdividing an organization, or merging organizations. If propagation of a covered work results from an entity transaction, each party to that transaction who receives a copy of the work also receives whatever licenses to the work the party's predecessor in interest had or could give under the previous paragraph, plus a right to possession of the Corresponding Source of the work from the predecessor in interest, if the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the rights granted or affirmed under this License. For example, you may not impose a license fee, royalty, or other charge for exercise of rights granted under this License, and you may not initiate litigation (including a cross-claim or counterclaim in a lawsuit) alleging that any patent claim is infringed by making, using, selling, offering for

sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this License of the Program or a work on which the Program is based. The work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims owned or controlled by the contributor, whether already acquired or hereafter acquired, that would be infringed by some manner, permitted by this License, of making, using, or selling its contributor version, but do not include claims that would be infringed only as a consequence of further modification of the contributor version. For purposes of this definition, "control" includes the right to grant patent sublicenses in a manner consistent with the requirements of this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying

the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a

later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY
APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT
HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY
OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO,
THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM
IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF
ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

```
    You should have received a copy of the GNU General Public License
    along with this program.  If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program>  Copyright (C) <year>  <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, your program's commands
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.90 tzdata

```
tzdata
---------------------------------------------------------------
tzdata/LICENSE
---------------------------------------------------------------
Unless specified below, all files in the tz code and data (including
this LICENSE file) are in the public domain.

If the files date.c, newstrftime.3, and strftime.c are present, they
contain material derived from BSD and use the BSD 3-clause license.
```

3.91 udev-lfs

udev-lfs

3.92 util-linux

```
util-linux
----------------------------------------------------------------------
util-linux/libmount/COPYING
----------------------------------------------------------------------
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later
version.

The complete text of the license is available in the
../Documentation/licenses/COPYING.LGPLv2.1 file.
----------------------------------------------------------------------
util-linux/libuuid/src/copy.c
----------------------------------------------------------------------
/*
 * copy.c --- copy UUIDs
 *
 * Copyright (C) 1996, 1997 Theodore Ts'o.
 *
 * %Begin-Header%
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, and the entire permission notice in its entirety,
 *    including the disclaimer of warranties.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
 * 3. The name of the author may not be used to endorse or promote
 *    products derived from this software without specific prior
 *    written permission.
 *
 * THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
 * WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
 * OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF
 * WHICH ARE HEREBY DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE
 * LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
 * CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
 * OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
 * BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
 * LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
 * (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
 * USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH
 * DAMAGE.
 * %End-Header%
 */

#include "uuidP.h"

void uuid_copy(uuid_t dst, const uuid_t src)
{
        unsigned char           *cp1;
        const unsigned char     *cp2;
```

```
        int                     i;

        for (i=0, cp1 = dst, cp2 = src; i < 16; i++)
                *cp1++ = *cp2++;
}
```

---

util-linux/libuuid/COPYING

```
This library is free software; you can redistribute it and/or
modify it under the terms of the Modified BSD License.

The complete text of the license is available in the
../Documentation/licenses/COPYING.BSD-3 file.
```

---

util-linux/libfdisk/COPYING

```
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later
version.

The complete text of the license is available in the
../Documentation/licenses/COPYING.LGPLv2.1 file.
```

---

util-linux/COPYING

```
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.
```

```
  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
```

distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
    parties under the terms of this License.

    c) If the modified program normally reads commands interactively
    when run, you must cause it, when started running for such
    interactive use in the most ordinary way, to print or display an
    announcement including an appropriate copyright notice and a
    notice that there is no warranty (or else, saying that you provide
    a warranty) and that users may redistribute the program under
    these conditions, and telling the user how to view a copy of this
    License. (Exception: if the Program itself is interactive but
    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is

```
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it.  For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable.  However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License.  Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it.  However, nothing else grants you permission to modify or
distribute the Program or its derivative works.  These actions are
prohibited by law if you do not accept this License.  Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions.  You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License.  If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all.  For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.
```

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is
implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

```
  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:
```

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs. If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----
util-linux/Documentation/licenses/

----
util-linux/Documentation/licenses/COPYING.GPLv2

                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users. This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it. (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.) You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price. Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have. You must make sure that they, too, receive or can get the
source code. And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

```
  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
program will individually obtain patent licenses, in effect making the
program proprietary.  To prevent this, we have made it clear that any
patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and
modification follow.

                    GNU GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains
a notice placed by the copyright holder saying it may be distributed
under the terms of this General Public License.  The "Program", below,
refers to any such program or work, and a "work based on the Program"
means either the Program or any derivative work under copyright law:
that is to say, a work containing the Program or a portion of it,
either verbatim or with modifications and/or translated into another
language.  (Hereinafter, translation is included without limitation in
the term "modification".)  Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope.  The act of
running the Program is not restricted, and the output from the Program
is covered only if its contents constitute a work based on the
Program (independent of having been made by running the Program).
Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's
source code as you receive it, in any medium, provided that you
conspicuously and appropriately publish on each copy an appropriate
copyright notice and disclaimer of warranty; keep intact all the
notices that refer to this License and to the absence of any warranty;
and give any other recipients of the Program a copy of this License
along with the Program.

You may charge a fee for the physical act of transferring a copy, and
you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion
of it, thus forming a work based on the Program, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices
    stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in
    whole or in part contains or is derived from the Program or any
    part thereof, to be licensed as a whole at no charge to all third
```

parties under the terms of this License.

c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but does not normally print such an announcement, your work based on the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Program, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Program, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Program.

In addition, mere aggregation of another work not based on the Program with the Program (or with a work based on the Program) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

3. You may copy and distribute the Program (or a work based on it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you also do one of the following:

a) Accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

b) Accompany it with a written offer, valid for at least three years, to give any third party, for a charge no more than your cost of physically performing source distribution, a complete machine-readable copy of the corresponding source code, to be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange; or,

c) Accompany it with the information you received as to the offer to distribute corresponding source code. (This alternative is allowed only for noncommercial distribution and only if you received the program in object code or executable form with such an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for making modifications to it. For an executable work, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the executable. However, as a

special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not
compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program
except as expressly provided under this License. Any attempt
otherwise to copy, modify, sublicense or distribute the Program is
void, and will automatically terminate your rights under this License.
However, parties who have received copies, or rights, from you under
this License will not have their licenses terminated so long as such
parties remain in full compliance.

  5. You are not required to accept this License, since you have not
signed it. However, nothing else grants you permission to modify or
distribute the Program or its derivative works. These actions are
prohibited by law if you do not accept this License. Therefore, by
modifying or distributing the Program (or any work based on the
Program), you indicate your acceptance of this License to do so, and
all its terms and conditions for copying, distributing or modifying
the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the
Program), the recipient automatically receives a license from the
original licensor to copy, distribute or modify the Program subject to
these terms and conditions. You may not impose any further
restrictions on the recipients' exercise of the rights granted herein.
You are not responsible for enforcing compliance by third parties to
this License.

  7. If, as a consequence of a court judgment or allegation of patent
infringement or for any other reason (not limited to patent issues),
conditions are imposed on you (whether by court order, agreement or
otherwise) that contradict the conditions of this License, they do not
excuse you from the conditions of this License. If you cannot
distribute so as to satisfy simultaneously your obligations under this
License and any other pertinent obligations, then as a consequence you
may not distribute the Program at all. For example, if a patent
license would not permit royalty-free redistribution of the Program by
all those who receive copies directly or indirectly through you, then
the only way you could satisfy both it and this License would be to
refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under
any particular circumstance, the balance of the section is intended to
apply and the section as a whole is intended to apply in other
circumstances.

It is not the purpose of this section to induce you to infringe any
patents or other property right claims or to contest validity of any
such claims; this section has the sole purpose of protecting the
integrity of the free software distribution system, which is

implemented by public license practices. Many people have made
generous contributions to the wide range of software distributed
through that system in reliance on consistent application of that
system; it is up to the author/donor to decide if he or she is willing
to distribute software through any other system and a licensee cannot
impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  8. If the distribution and/or use of the Program is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Program under this License
may add an explicit geographical distribution limitation excluding
those countries, so that distribution is permitted only in or among
countries not thus excluded. In such case, this License incorporates
the limitation as if written in the body of this License.

  9. The Free Software Foundation may publish revised and/or new versions
of the General Public License from time to time. Such new versions will
be similar in spirit to the present version, but may differ in detail to
address new problems or concerns.

Each version is given a distinguishing version number. If the Program
specifies a version number of this License which applies to it and "any
later version", you have the option of following the terms and conditions
either of that version or of any later version published by the Free
Software Foundation. If the Program does not specify a version number of
this License, you may choose any version ever published by the Free Software
Foundation.

  10. If you wish to incorporate parts of the Program into other free
programs whose distribution conditions are different, write to the author
to ask for permission. For software which is copyrighted by the Free
Software Foundation, write to the Free Software Foundation; we sometimes
make exceptions for this. Our decision will be guided by the two goals
of preserving the free status of all derivatives of our free software and
of promoting the sharing and reuse of software generally.

                            NO WARRANTY

  11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY
FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN
OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES
PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED
OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF
MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS
TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE
PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING,
REPAIR OR CORRECTION.

  12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING
WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR
REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES,
INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING
OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED
TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY
YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER
PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE

```
POSSIBILITY OF SUCH DAMAGES.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
```

consider it more useful to permit linking proprietary applications with the
library. If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
---
util-linux/Documentation/licenses/COPYING.LGPLv2.1

                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
 as the successor of the GNU Library Public License, version 2, hence
 the version number 2.1.]

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it. By contrast, the GNU General Public
Licenses are intended to guarantee your freedom to share and change
free software--to make sure the software is free for all its users.

  This license, the Lesser General Public License, applies to some
specially designated software packages--typically libraries--of the
Free Software Foundation and other authors who decide to use it. You
can use it too, but we suggest you first think carefully about whether
this license or the ordinary General Public License is the better
strategy to use in any particular case, based on the explanations below.

  When we speak of free software, we are referring to freedom of use,
not price. Our General Public Licenses are designed to make sure that
you have the freedom to distribute copies of free software (and charge
for this service if you wish); that you receive source code or can get
it if you want it; that you can change the software and use pieces of
it in new free programs; and that you are informed that you can do
these things.

  To protect your rights, we need to make restrictions that forbid
distributors to deny you these rights or to ask you to surrender these
rights. These restrictions translate to certain responsibilities for
you if you distribute copies of the library or if you modify it.

  For example, if you distribute copies of the library, whether gratis
or for a fee, you must give the recipients all the rights that we gave
you. You must make sure that they, too, receive or can get the source
code. If you link other code with the library, you must provide
complete object files to the recipients, so that they can relink them
with the library after making changes to the library and recompiling
it. And you must show them these terms so they know their rights.

  We protect your rights with a two-step method: (1) we copyright the
library, and (2) we offer you this license, which gives you legal
permission to copy, distribute and/or modify the library.

  To protect each distributor, we want to make it very clear that
there is no warranty for the free library. Also, if the library is

```
modified by someone else and passed on, the recipients should know
that what they have is not the original version, so that the original
author's reputation will not be affected by problems that might be
introduced by others.


  Finally, software patents pose a constant threat to the existence of
any free program.  We wish to make sure that a company cannot
effectively restrict the users of a free program by obtaining a
restrictive license from a patent holder.  Therefore, we insist that
any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License.  This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License.  We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library.  The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom.  The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License.  It also provides other free software developers Less
of an advantage over competing non-free programs.  These disadvantages
are the reason we use the ordinary General Public License for many
libraries.  However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard.  To achieve this, non-free programs must be
allowed to use the library.  A more frequent case is that a free
library does the same job as widely used non-free libraries.  In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software.  For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow.  Pay close attention to the difference between a
"work based on the library" and a "work that uses the library".  The
```

former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

GNU LESSER GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

0. This License Agreement applies to any software library or other program which contains a notice placed by the copyright holder or other authorized party saying it may be distributed under the terms of this Lesser General Public License (also called "this License"). Each licensee is addressed as "you".

A "library" means a collection of software functions and/or data prepared so as to be conveniently linked with application programs (which use some of those functions and data) to form executables.

The "Library", below, refers to any such software library or work which has been distributed under these terms. A "work based on the Library" means either the Library or any derivative work under copyright law: that is to say, a work containing the Library or a portion of it, either verbatim or with modifications and/or translated straightforwardly into another language. (Hereinafter, translation is included without limitation in the term "modification".)

"Source code" for a work means the preferred form of the work for making modifications to it. For a library, complete source code means all the source code for all modules it contains, plus any associated interface definition files, plus the scripts used to control compilation and installation of the library.

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running a program using the Library is not restricted, and output from such a program is covered only if its contents constitute a work based on the Library (independent of the use of the Library in a tool for writing it). Whether that is true depends on what the Library does and what the program that uses the Library does.

1. You may copy and distribute verbatim copies of the Library's complete source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and distribute a copy of this License along with the Library.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

2. You may modify your copy or copies of the Library or any portion of it, thus forming a work based on the Library, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

a) The modified work must itself be a software library.

b) You must cause the files modified to carry prominent notices
stating that you changed the files and the date of any change.

c) You must cause the whole of the work to be licensed at no
charge to all third parties under the terms of this License.

d) If a facility in the modified Library refers to a function or a
table of data to be supplied by an application program that uses
the facility, other than as an argument passed when the facility
is invoked, then you must make a good faith effort to ensure that,
in the event an application does not supply such function or
table, the facility still operates, and performs whatever part of
its purpose remains meaningful.

(For example, a function in a library to compute square roots has
a purpose that is entirely well-defined independent of the
application. Therefore, Subsection 2d requires that any
application-supplied function or table used by this function must
be optional: if the application does not supply it, the square
root function must still compute square roots.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Library,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Library, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote
it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Library.

In addition, mere aggregation of another work not based on the Library
with the Library (or with a work based on the Library) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

3. You may opt to apply the terms of the ordinary GNU General Public
License instead of this License to a given copy of the Library. To do
this, you must alter all the notices that refer to this License, so
that they refer to the ordinary GNU General Public License, version 2,
instead of to this License. (If a newer version than version 2 of the
ordinary GNU General Public License has appeared, then you can specify
that version instead if you wish.) Do not make any other change in
these notices.

Once this change is made in a given copy, it is irreversible for
that copy, so the ordinary GNU General Public License applies to all
subsequent copies and derivative works made from that copy.

This option is useful when you wish to copy part of the code of
the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or
derivative of it, under Section 2) in object code or executable form
under the terms of Sections 1 and 2 above provided that you accompany
it with the complete corresponding machine-readable source code, which
must be distributed under the terms of Sections 1 and 2 above on a
medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy
from a designated place, then offering equivalent access to copy the
source code from the same place satisfies the requirement to
distribute the source code, even though third parties are not
compelled to copy the source along with the object code.

  5. A program that contains no derivative of any portion of the
Library, but is designed to work with the Library by being compiled or
linked with it, is called a "work that uses the Library". Such a
work, in isolation, is not a derivative work of the Library, and
therefore falls outside the scope of this License.

  However, linking a "work that uses the Library" with the Library
creates an executable that is a derivative of the Library (because it
contains portions of the Library), rather than a "work that uses the
library". The executable is therefore covered by this License.
Section 6 states terms for distribution of such executables.

  When a "work that uses the Library" uses material from a header file
that is part of the Library, the object code for the work may be a
derivative work of the Library even though the source code is not.
Whether this is true is especially significant if the work can be
linked without the Library, or if the work is itself a library. The
threshold for this to be true is not precisely defined by law.

  If such an object file uses only numerical parameters, data
structure layouts and accessors, and small macros and small inline
functions (ten lines or less in length), then the use of the object
file is unrestricted, regardless of whether it is legally a derivative
work. (Executables containing this object code plus portions of the
Library will still fall under Section 6.)

  Otherwise, if the work is a derivative of the Library, you may
distribute the object code for the work under the terms of Section 6.
Any executables containing that work also fall under Section 6,
whether or not they are linked directly with the Library itself.

  6. As an exception to the Sections above, you may also combine or
link a "work that uses the Library" with the Library to produce a
work containing portions of the Library, and distribute that work
under terms of your choice, provided that the terms permit
modification of the work for the customer's own use and reverse
engineering for debugging such modifications.

  You must give prominent notice with each copy of the work that the
Library is used in it and that the Library and its use are covered by
this License. You must supply a copy of this License. If the work
during execution displays copyright notices, you must include the
copyright notice for the Library among them, as well as a reference
directing the user to the copy of this License. Also, you must do one
of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the Library will not necessarily be able to recompile the application to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the Library. A suitable mechanism is one that (1) uses at run time a copy of the library already present on the user's computer system, rather than copying library functions into the executable, and (2) will operate properly with a modified version of the library, if the user installs one, as long as the modified version is interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at least three years, to give the same user the materials specified in Subsection 6a, above, for a charge no more than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy from a designated place, offer equivalent access to copy the above specified materials from the same place.

e) Verify that the user has already received a copy of these materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the Library" must include any data and utility programs needed for reproducing the executable from it. However, as a special exception, the materials to be distributed need not include anything that is normally distributed (in either source or binary form) with the major components (compiler, kernel, and so on) of the operating system on which the executable runs, unless that component itself accompanies the executable.

It may happen that this requirement contradicts the license restrictions of other proprietary libraries that do not normally accompany the operating system. Such a contradiction means you cannot use both them and the Library together in an executable that you distribute.

7. You may place library facilities that are a work based on the Library side-by-side in a single library together with other library facilities not covered by this License, and distribute such a combined library, provided that the separate distribution of the work based on the Library and of the other library facilities is otherwise permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work based on the Library, uncombined with any other library facilities. This must be distributed under the terms of the

Sections above.

b) Give prominent notice with the combined library of the fact that part of it is a work based on the Library, and explaining where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute the Library except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense, link with, or distribute the Library is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to
be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in
certain countries either by patents or by copyrighted interfaces, the
original copyright holder who places the Library under this License may add
an explicit geographical distribution limitation excluding those countries,
so that distribution is permitted only in or among countries not thus
excluded. In such case, this License incorporates the limitation as if
written in the body of this License.

  13. The Free Software Foundation may publish revised and/or new
versions of the Lesser General Public License from time to time.
Such new versions will be similar in spirit to the present version,
but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library
specifies a version number of this License which applies to it and
"any later version", you have the option of following the terms and
conditions either of that version or of any later version published by
the Free Software Foundation. If the Library does not specify a
license version number, you may choose any version ever published by
the Free Software Foundation.

  14. If you wish to incorporate parts of the Library into other free
programs whose distribution conditions are incompatible with these,
write to the author to ask for permission. For software which is
copyrighted by the Free Software Foundation, write to the Free
Software Foundation; we sometimes make exceptions for this. Our
decision will be guided by the two goals of preserving the free status
of all derivatives of our free software and of promoting the sharing
and reuse of software generally.

NO WARRANTY

  15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO
WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW.
EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR
OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY
KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE
IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR
PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE
LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME
THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN
WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY
AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU
FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR
CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE
LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING
RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A
FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF
SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH
DAMAGES.

END OF TERMS AND CONDITIONS

```
            How to Apply These Terms to Your New Libraries

  If you develop a new library, and you want it to be of the greatest
possible use to the public, we recommend making it free software that
everyone can redistribute and change.  You can do so by permitting
redistribution under these terms (or, alternatively, under the terms of the
ordinary General Public License).

  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
---------------------------------------------------------------------
util-linux/Documentation/licenses/COPYING.UCB
---------------------------------------------------------------------
/*
 * Copyright (c) 1989 The Regents of the University of California.
 * All rights reserved.
 *
 * Redistribution and use in source and binary forms, with or without
 * modification, are permitted provided that the following conditions
 * are met:
 * 1. Redistributions of source code must retain the above copyright
 *    notice, this list of conditions and the following disclaimer.
 * 2. Redistributions in binary form must reproduce the above copyright
 *    notice, this list of conditions and the following disclaimer in the
 *    documentation and/or other materials provided with the distribution.
```

```
 * 3. All advertising materials mentioning features or use of this software
 *    must display the following acknowledgement:
 *      This product includes software developed by the University of
 *      California, Berkeley and its contributors.
 * 4. Neither the name of the University nor the names of its contributors
 *    may be used to endorse or promote products derived from this software
 *    without specific prior written permission.
 *
 * THIS SOFTWARE IS PROVIDED BY THE REGENTS AND CONTRIBUTORS ``AS IS'' AND
 * ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE
 * IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE
 * ARE DISCLAIMED.  IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE
 * FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL
 * DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS
 * OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION)
 * HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT
 * LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY
 * OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF
 * SUCH DAMAGE.
 */
------------------------------------------------------------------
util-linux/Documentation/licenses/COPYING.BSD-3
------------------------------------------------------------------
Redistribution and use in source and binary forms, with or without
modification, are permitted provided that the following conditions
are met:
1. Redistributions of source code must retain the above copyright
   notice, and the entire permission notice in its entirety,
   including the disclaimer of warranties.
2. Redistributions in binary form must reproduce the above copyright
   notice, this list of conditions and the following disclaimer in the
   documentation and/or other materials provided with the distribution.
3. The name of the author may not be used to endorse or promote
   products derived from this software without specific prior
   written permission.

THIS SOFTWARE IS PROVIDED ``AS IS'' AND ANY EXPRESS OR IMPLIED
WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES
OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ALL OF
WHICH ARE HEREBY DISCLAIMED.  IN NO EVENT SHALL THE AUTHOR BE
LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR
CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT
OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR
BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF
LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT
(INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE
USE OF THIS SOFTWARE, EVEN IF NOT ADVISED OF THE POSSIBILITY OF SUCH
DAMAGE.
------------------------------------------------------------------
util-linux/libsmartcols/COPYING
------------------------------------------------------------------
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later
version.

The complete text of the license is available in the
../Documentation/licenses/COPYING.LGPLv2.1 file.
```

```
------------------------------------------------------------------
util-linux/libblkid/COPYING
------------------------------------------------------------------
This library is free software; you can redistribute it and/or
modify it under the terms of the GNU Lesser General Public
License as published by the Free Software Foundation; either
version 2.1 of the License, or (at your option) any later
version.

The complete text of the license is available in the
../Documentation/licenses/COPYING.LGPLv2.1 file.
```

3.93 vim

```
vim
---------------------------------------------------------------------
vim/src/xpm/COPYRIGHT
---------------------------------------------------------------------
/*
 * Copyright (C) 1989-95 GROUPE BULL
 *
 * Permission is hereby granted, free of charge, to any person obtaining a copy
 * of this software and associated documentation files (the "Software"), to
 * deal in the Software without restriction, including without limitation the
 * rights to use, copy, modify, merge, publish, distribute, sublicense, and/or
 * sell copies of the Software, and to permit persons to whom the Software is
 * furnished to do so, subject to the following conditions:
 *
 * The above copyright notice and this permission notice shall be included in
 * all copies or substantial portions of the Software.
 *
 * THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
 * IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
 * FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT. IN NO EVENT SHALL
 * GROUPE BULL BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN
 * AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN
 * CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.
 *
 * Except as contained in this notice, the name of GROUPE BULL shall not be
 * used in advertising or otherwise to promote the sale, use or other dealings
 * in this Software without prior written authorization from GROUPE BULL.
 */

Arnaud LE HORS      BULL Research FRANCE -- Koala Project
                    (XPM - X PixMap format version 2 & 3)
    Internet:       lehors@sophia.inria.fr
Surface Mail:       Arnaud LE HORS, INRIA - Sophia Antipolis,
                    2004, route des Lucioles, 06565 Valbonne Cedex -- FRANCE
 Voice phone:       (33) 93.65.77.71, Fax: (33) 93 65 77 66, Telex: 97 00 50 F
```

3.94 xz

```
xz
--------------------------------------------------------------------
xz/COPYING.GPLv2
--------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 2, June 1991

 Copyright (C) 1989, 1991 Free Software Foundation, Inc.,
 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The licenses for most software are designed to take away your
freedom to share and change it.  By contrast, the GNU General Public
License is intended to guarantee your freedom to share and change free
software--to make sure the software is free for all its users.  This
General Public License applies to most of the Free Software
Foundation's software and to any other program whose authors commit to
using it.  (Some other Free Software Foundation software is covered by
the GNU Lesser General Public License instead.)  You can apply it to
your programs, too.

  When we speak of free software, we are referring to freedom, not
price.  Our General Public Licenses are designed to make sure that you
have the freedom to distribute copies of free software (and charge for
this service if you wish), that you receive source code or can get it
if you want it, that you can change the software or use pieces of it
in new free programs; and that you know you can do these things.

  To protect your rights, we need to make restrictions that forbid
anyone to deny you these rights or to ask you to surrender the rights.
These restrictions translate to certain responsibilities for you if you
distribute copies of the software, or if you modify it.

  For example, if you distribute copies of such a program, whether
gratis or for a fee, you must give the recipients all the rights that
you have.  You must make sure that they, too, receive or can get the
source code.  And you must show them these terms so they know their
rights.

  We protect your rights with two steps: (1) copyright the software, and
(2) offer you this license which gives you legal permission to copy,
distribute and/or modify the software.

  Also, for each author's protection and ours, we want to make certain
that everyone understands that there is no warranty for this free
software.  If the software is modified by someone else and passed on, we
want its recipients to know that what they have is not the original, so
that any problems introduced by others will not reflect on the original
authors' reputations.

  Finally, any free program is threatened constantly by software
patents.  We wish to avoid the danger that redistributors of a free
```

program will individually obtain patent licenses, in effect making the program proprietary. To prevent this, we have made it clear that any patent must be licensed for everyone's free use or not licensed at all.

  The precise terms and conditions for copying, distribution and modification follow.

GNU GENERAL PUBLIC LICENSE
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License applies to any program or other work which contains a notice placed by the copyright holder saying it may be distributed under the terms of this General Public License. The "Program", below, refers to any such program or work, and a "work based on the Program" means either the Program or any derivative work under copyright law: that is to say, a work containing the Program or a portion of it, either verbatim or with modifications and/or translated into another language. (Hereinafter, translation is included without limitation in the term "modification".) Each licensee is addressed as "you".

Activities other than copying, distribution and modification are not covered by this License; they are outside its scope. The act of running the Program is not restricted, and the output from the Program is covered only if its contents constitute a work based on the Program (independent of having been made by running the Program). Whether that is true depends on what the Program does.

  1. You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.

You may charge a fee for the physical act of transferring a copy, and you may at your option offer warranty protection in exchange for a fee.

  2. You may modify your copy or copies of the Program or any portion of it, thus forming a work based on the Program, and copy and distribute such modifications or work under the terms of Section 1 above, provided that you also meet all of these conditions:

    a) You must cause the modified files to carry prominent notices stating that you changed the files and the date of any change.

    b) You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License.

    c) If the modified program normally reads commands interactively when run, you must cause it, when started running for such interactive use in the most ordinary way, to print or display an announcement including an appropriate copyright notice and a notice that there is no warranty (or else, saying that you provide a warranty) and that users may redistribute the program under these conditions, and telling the user how to view a copy of this License. (Exception: if the Program itself is interactive but

    does not normally print such an announcement, your work based on
    the Program is not required to print an announcement.)

These requirements apply to the modified work as a whole. If
identifiable sections of that work are not derived from the Program,
and can be reasonably considered independent and separate works in
themselves, then this License, and its terms, do not apply to those
sections when you distribute them as separate works. But when you
distribute the same sections as part of a whole which is a work based
on the Program, the distribution of the whole must be on the terms of
this License, whose permissions for other licensees extend to the
entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest
your rights to work written entirely by you; rather, the intent is to
exercise the right to control the distribution of derivative or
collective works based on the Program.

In addition, mere aggregation of another work not based on the Program
with the Program (or with a work based on the Program) on a volume of
a storage or distribution medium does not bring the other work under
the scope of this License.

  3. You may copy and distribute the Program (or a work based on it,
under Section 2) in object code or executable form under the terms of
Sections 1 and 2 above provided that you also do one of the following:

    a) Accompany it with the complete corresponding machine-readable
    source code, which must be distributed under the terms of Sections
    1 and 2 above on a medium customarily used for software interchange; or,

    b) Accompany it with a written offer, valid for at least three
    years, to give any third party, for a charge no more than your
    cost of physically performing source distribution, a complete
    machine-readable copy of the corresponding source code, to be
    distributed under the terms of Sections 1 and 2 above on a medium
    customarily used for software interchange; or,

    c) Accompany it with the information you received as to the offer
    to distribute corresponding source code. (This alternative is
    allowed only for noncommercial distribution and only if you
    received the program in object code or executable form with such
    an offer, in accord with Subsection b above.)

The source code for a work means the preferred form of the work for
making modifications to it. For an executable work, complete source
code means all the source code for all modules it contains, plus any
associated interface definition files, plus the scripts used to
control compilation and installation of the executable. However, as a
special exception, the source code distributed need not include
anything that is normally distributed (in either source or binary
form) with the major components (compiler, kernel, and so on) of the
operating system on which the executable runs, unless that component
itself accompanies the executable.

If distribution of executable or object code is made by offering
access to copy from a designated place, then offering equivalent
access to copy the source code from the same place counts as
distribution of the source code, even though third parties are not

compelled to copy the source along with the object code.

  4. You may not copy, modify, sublicense, or distribute the Program except as expressly provided under this License. Any attempt otherwise to copy, modify, sublicense or distribute the Program is void, and will automatically terminate your rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  5. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Program or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Program (or any work based on the Program), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Program or works based on it.

  6. Each time you redistribute the Program (or any work based on the Program), the recipient automatically receives a license from the original licensor to copy, distribute or modify the Program subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties to this License.

  7. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Program at all. For example, if a patent license would not permit royalty-free redistribution of the Program by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Program.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system, which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

8. If the distribution and/or use of the Program is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Program under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if written in the body of this License.

9. The Free Software Foundation may publish revised and/or new versions of the General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Program specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of this License, you may choose any version ever published by the Free Software Foundation.

10. If you wish to incorporate parts of the Program into other free programs whose distribution conditions are different, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

11. BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

12. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Programs

If you develop a new program, and you want it to be of the greatest possible use to the public, the best way to achieve this is to make it free software which everyone can redistribute and change under these terms.

```
  To do so, attach the following notices to the program.  It is safest
to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This program is free software; you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation; either version 2 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License along
    with this program; if not, write to the Free Software Foundation, Inc.,
    51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.

Also add information on how to contact you by electronic and paper mail.

If the program is interactive, make it output a short notice like this
when it starts in an interactive mode:

    Gnomovision version 69, Copyright (C) year name of author
    Gnomovision comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License.  Of course, the commands you use may
be called something other than `show w' and `show c'; they could even be
mouse-clicks or menu items--whatever suits your program.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the program, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the program
  `Gnomovision' (which makes passes at compilers) written by James Hacker.

  <signature of Ty Coon>, 1 April 1989
  Ty Coon, President of Vice

This General Public License does not permit incorporating your program into
proprietary programs.  If your program is a subroutine library, you may
consider it more useful to permit linking proprietary applications with the
library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.
----------------------------------------------------------------------
xz/COPYING.LGPLv2.1
----------------------------------------------------------------------
                  GNU LESSER GENERAL PUBLIC LICENSE
                       Version 2.1, February 1999

 Copyright (C) 1991, 1999 Free Software Foundation, Inc.
```

51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.

[This is the first released version of the Lesser GPL. It also counts
as the successor of the GNU Library Public License, version 2, hence
the version number 2.1.]

Preamble

The licenses for most software are designed to take away your freedom to share and change it. By contrast, the GNU General Public Licenses are intended to guarantee your freedom to share and change free software--to make sure the software is free for all its users.

This license, the Lesser General Public License, applies to some specially designated software packages--typically libraries--of the Free Software Foundation and other authors who decide to use it. You can use it too, but we suggest you first think carefully about whether this license or the ordinary General Public License is the better strategy to use in any particular case, based on the explanations below.

When we speak of free software, we are referring to freedom of use, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for this service if you wish); that you receive source code or can get it if you want it; that you can change the software and use pieces of it in new free programs; and that you are informed that you can do these things.

To protect your rights, we need to make restrictions that forbid distributors to deny you these rights or to ask you to surrender these rights. These restrictions translate to certain responsibilities for you if you distribute copies of the library or if you modify it.

For example, if you distribute copies of the library, whether gratis or for a fee, you must give the recipients all the rights that we gave you. You must make sure that they, too, receive or can get the source code. If you link other code with the library, you must provide complete object files to the recipients, so that they can relink them with the library after making changes to the library and recompiling it. And you must show them these terms so they know their rights.

We protect your rights with a two-step method: (1) we copyright the library, and (2) we offer you this license, which gives you legal permission to copy, distribute and/or modify the library.

To protect each distributor, we want to make it very clear that there is no warranty for the free library. Also, if the library is modified by someone else and passed on, the recipients should know that what they have is not the original version, so that the original author's reputation will not be affected by problems that might be introduced by others.

Finally, software patents pose a constant threat to the existence of any free program. We wish to make sure that a company cannot effectively restrict the users of a free program by obtaining a restrictive license from a patent holder. Therefore, we insist that

any patent license obtained for a version of the library must be
consistent with the full freedom of use specified in this license.

  Most GNU software, including some libraries, is covered by the
ordinary GNU General Public License. This license, the GNU Lesser
General Public License, applies to certain designated libraries, and
is quite different from the ordinary General Public License. We use
this license for certain libraries in order to permit linking those
libraries into non-free programs.

  When a program is linked with a library, whether statically or using
a shared library, the combination of the two is legally speaking a
combined work, a derivative of the original library. The ordinary
General Public License therefore permits such linking only if the
entire combination fits its criteria of freedom. The Lesser General
Public License permits more lax criteria for linking other code with
the library.

  We call this license the "Lesser" General Public License because it
does Less to protect the user's freedom than the ordinary General
Public License. It also provides other free software developers Less
of an advantage over competing non-free programs. These disadvantages
are the reason we use the ordinary General Public License for many
libraries. However, the Lesser license provides advantages in certain
special circumstances.

  For example, on rare occasions, there may be a special need to
encourage the widest possible use of a certain library, so that it becomes
a de-facto standard. To achieve this, non-free programs must be
allowed to use the library. A more frequent case is that a free
library does the same job as widely used non-free libraries. In this
case, there is little to gain by limiting the free library to free
software only, so we use the Lesser General Public License.

  In other cases, permission to use a particular library in non-free
programs enables a greater number of people to use a large body of
free software. For example, permission to use the GNU C Library in
non-free programs enables many more people to use the whole GNU
operating system, as well as its variant, the GNU/Linux operating
system.

  Although the Lesser General Public License is Less protective of the
users' freedom, it does ensure that the user of a program that is
linked with the Library has the freedom and the wherewithal to run
that program using a modified version of the Library.

  The precise terms and conditions for copying, distribution and
modification follow. Pay close attention to the difference between a
"work based on the library" and a "work that uses the library". The
former contains code derived from the library, whereas the latter must
be combined with the library in order to run.

                    GNU LESSER GENERAL PUBLIC LICENSE
   TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

  0. This License Agreement applies to any software library or other
program which contains a notice placed by the copyright holder or
other authorized party saying it may be distributed under the terms of

this Lesser General Public License (also called "this License").
Each licensee is addressed as "you".

  A "library" means a collection of software functions and/or data
prepared so as to be conveniently linked with application programs
(which use some of those functions and data) to form executables.

  The "Library", below, refers to any such software library or work
which has been distributed under these terms. A "work based on the
Library" means either the Library or any derivative work under
copyright law: that is to say, a work containing the Library or a
portion of it, either verbatim or with modifications and/or translated
straightforwardly into another language. (Hereinafter, translation is
included without limitation in the term "modification".)

  "Source code" for a work means the preferred form of the work for
making modifications to it. For a library, complete source code means
all the source code for all modules it contains, plus any associated
interface definition files, plus the scripts used to control compilation
and installation of the library.

  Activities other than copying, distribution and modification are not
covered by this License; they are outside its scope. The act of
running a program using the Library is not restricted, and output from
such a program is covered only if its contents constitute a work based
on the Library (independent of the use of the Library in a tool for
writing it). Whether that is true depends on what the Library does
and what the program that uses the Library does.

  1. You may copy and distribute verbatim copies of the Library's
complete source code as you receive it, in any medium, provided that
you conspicuously and appropriately publish on each copy an
appropriate copyright notice and disclaimer of warranty; keep intact
all the notices that refer to this License and to the absence of any
warranty; and distribute a copy of this License along with the
Library.

  You may charge a fee for the physical act of transferring a copy,
and you may at your option offer warranty protection in exchange for a
fee.

  2. You may modify your copy or copies of the Library or any portion
of it, thus forming a work based on the Library, and copy and
distribute such modifications or work under the terms of Section 1
above, provided that you also meet all of these conditions:

    a) The modified work must itself be a software library.

    b) You must cause the files modified to carry prominent notices
    stating that you changed the files and the date of any change.

    c) You must cause the whole of the work to be licensed at no
    charge to all third parties under the terms of this License.

    d) If a facility in the modified Library refers to a function or a
    table of data to be supplied by an application program that uses
    the facility, other than as an argument passed when the facility
    is invoked, then you must make a good faith effort to ensure that,

    in the event an application does not supply such function or
    table, the facility still operates, and performs whatever part of
    its purpose remains meaningful.

    (For example, a function in a library to compute square roots has
    a purpose that is entirely well-defined independent of the
    application. Therefore, Subsection 2d requires that any
    application-supplied function or table used by this function must
    be optional: if the application does not supply it, the square
    root function must still compute square roots.)

These requirements apply to the modified work as a whole. If identifiable sections of that work are not derived from the Library, and can be reasonably considered independent and separate works in themselves, then this License, and its terms, do not apply to those sections when you distribute them as separate works. But when you distribute the same sections as part of a whole which is a work based on the Library, the distribution of the whole must be on the terms of this License, whose permissions for other licensees extend to the entire whole, and thus to each and every part regardless of who wrote it.

Thus, it is not the intent of this section to claim rights or contest your rights to work written entirely by you; rather, the intent is to exercise the right to control the distribution of derivative or collective works based on the Library.

In addition, mere aggregation of another work not based on the Library with the Library (or with a work based on the Library) on a volume of a storage or distribution medium does not bring the other work under the scope of this License.

  3. You may opt to apply the terms of the ordinary GNU General Public License instead of this License to a given copy of the Library. To do this, you must alter all the notices that refer to this License, so that they refer to the ordinary GNU General Public License, version 2, instead of to this License. (If a newer version than version 2 of the ordinary GNU General Public License has appeared, then you can specify that version instead if you wish.) Do not make any other change in these notices.

  Once this change is made in a given copy, it is irreversible for that copy, so the ordinary GNU General Public License applies to all subsequent copies and derivative works made from that copy.

  This option is useful when you wish to copy part of the code of the Library into a program that is not a library.

  4. You may copy and distribute the Library (or a portion or derivative of it, under Section 2) in object code or executable form under the terms of Sections 1 and 2 above provided that you accompany it with the complete corresponding machine-readable source code, which must be distributed under the terms of Sections 1 and 2 above on a medium customarily used for software interchange.

  If distribution of object code is made by offering access to copy from a designated place, then offering equivalent access to copy the source code from the same place satisfies the requirement to

distribute the source code, even though third parties are not compelled to copy the source along with the object code.

5. A program that contains no derivative of any portion of the Library, but is designed to work with the Library by being compiled or linked with it, is called a "work that uses the Library". Such a work, in isolation, is not a derivative work of the Library, and therefore falls outside the scope of this License.

However, linking a "work that uses the Library" with the Library creates an executable that is a derivative of the Library (because it contains portions of the Library), rather than a "work that uses the library". The executable is therefore covered by this License. Section 6 states terms for distribution of such executables.

When a "work that uses the Library" uses material from a header file that is part of the Library, the object code for the work may be a derivative work of the Library even though the source code is not. Whether this is true is especially significant if the work can be linked without the Library, or if the work is itself a library. The threshold for this to be true is not precisely defined by law.

If such an object file uses only numerical parameters, data structure layouts and accessors, and small macros and small inline functions (ten lines or less in length), then the use of the object file is unrestricted, regardless of whether it is legally a derivative work. (Executables containing this object code plus portions of the Library will still fall under Section 6.)

Otherwise, if the work is a derivative of the Library, you may distribute the object code for the work under the terms of Section 6. Any executables containing that work also fall under Section 6, whether or not they are linked directly with the Library itself.

6. As an exception to the Sections above, you may also combine or link a "work that uses the Library" with the Library to produce a work containing portions of the Library, and distribute that work under terms of your choice, provided that the terms permit modification of the work for the customer's own use and reverse engineering for debugging such modifications.

You must give prominent notice with each copy of the work that the Library is used in it and that the Library and its use are covered by this License. You must supply a copy of this License. If the work during execution displays copyright notices, you must include the copyright notice for the Library among them, as well as a reference directing the user to the copy of this License. Also, you must do one of these things:

a) Accompany the work with the complete corresponding machine-readable source code for the Library including whatever changes were used in the work (which must be distributed under Sections 1 and 2 above); and, if the work is an executable linked with the Library, with the complete machine-readable "work that uses the Library", as object code and/or source code, so that the user can modify the Library and then relink to produce a modified executable containing the modified Library. (It is understood that the user who changes the contents of definitions files in the

Library will not necessarily be able to recompile the application
to use the modified definitions.)

b) Use a suitable shared library mechanism for linking with the
Library. A suitable mechanism is one that (1) uses at run time a
copy of the library already present on the user's computer system,
rather than copying library functions into the executable, and (2)
will operate properly with a modified version of the library, if
the user installs one, as long as the modified version is
interface-compatible with the version that the work was made with.

c) Accompany the work with a written offer, valid for at
least three years, to give the same user the materials
specified in Subsection 6a, above, for a charge no more
than the cost of performing this distribution.

d) If distribution of the work is made by offering access to copy
from a designated place, offer equivalent access to copy the above
specified materials from the same place.

e) Verify that the user has already received a copy of these
materials or that you have already sent this user a copy.

For an executable, the required form of the "work that uses the
Library" must include any data and utility programs needed for
reproducing the executable from it. However, as a special exception,
the materials to be distributed need not include anything that is
normally distributed (in either source or binary form) with the major
components (compiler, kernel, and so on) of the operating system on
which the executable runs, unless that component itself accompanies
the executable.

It may happen that this requirement contradicts the license
restrictions of other proprietary libraries that do not normally
accompany the operating system. Such a contradiction means you cannot
use both them and the Library together in an executable that you
distribute.

7. You may place library facilities that are a work based on the
Library side-by-side in a single library together with other library
facilities not covered by this License, and distribute such a combined
library, provided that the separate distribution of the work based on
the Library and of the other library facilities is otherwise
permitted, and provided that you do these two things:

a) Accompany the combined library with a copy of the same work
based on the Library, uncombined with any other library
facilities. This must be distributed under the terms of the
Sections above.

b) Give prominent notice with the combined library of the fact
that part of it is a work based on the Library, and explaining
where to find the accompanying uncombined form of the same work.

8. You may not copy, modify, sublicense, link with, or distribute
the Library except as expressly provided under this License. Any
attempt otherwise to copy, modify, sublicense, link with, or
distribute the Library is void, and will automatically terminate your

rights under this License. However, parties who have received copies, or rights, from you under this License will not have their licenses terminated so long as such parties remain in full compliance.

  9. You are not required to accept this License, since you have not signed it. However, nothing else grants you permission to modify or distribute the Library or its derivative works. These actions are prohibited by law if you do not accept this License. Therefore, by modifying or distributing the Library (or any work based on the Library), you indicate your acceptance of this License to do so, and all its terms and conditions for copying, distributing or modifying the Library or works based on it.

  10. Each time you redistribute the Library (or any work based on the Library), the recipient automatically receives a license from the original licensor to copy, distribute, link with or modify the Library subject to these terms and conditions. You may not impose any further restrictions on the recipients' exercise of the rights granted herein. You are not responsible for enforcing compliance by third parties with this License.

  11. If, as a consequence of a court judgment or allegation of patent infringement or for any other reason (not limited to patent issues), conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not excuse you from the conditions of this License. If you cannot distribute so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not distribute the Library at all. For example, if a patent license would not permit royalty-free redistribution of the Library by all those who receive copies directly or indirectly through you, then the only way you could satisfy both it and this License would be to refrain entirely from distribution of the Library.

If any portion of this section is held invalid or unenforceable under any particular circumstance, the balance of the section is intended to apply, and the section as a whole is intended to apply in other circumstances.

It is not the purpose of this section to induce you to infringe any patents or other property right claims or to contest validity of any such claims; this section has the sole purpose of protecting the integrity of the free software distribution system which is implemented by public license practices. Many people have made generous contributions to the wide range of software distributed through that system in reliance on consistent application of that system; it is up to the author/donor to decide if he or she is willing to distribute software through any other system and a licensee cannot impose that choice.

This section is intended to make thoroughly clear what is believed to be a consequence of the rest of this License.

  12. If the distribution and/or use of the Library is restricted in certain countries either by patents or by copyrighted interfaces, the original copyright holder who places the Library under this License may add an explicit geographical distribution limitation excluding those countries, so that distribution is permitted only in or among countries not thus excluded. In such case, this License incorporates the limitation as if

written in the body of this License.

13. The Free Software Foundation may publish revised and/or new versions of the Lesser General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

Each version is given a distinguishing version number. If the Library specifies a version number of this License which applies to it and "any later version", you have the option of following the terms and conditions either of that version or of any later version published by the Free Software Foundation. If the Library does not specify a license version number, you may choose any version ever published by the Free Software Foundation.

14. If you wish to incorporate parts of the Library into other free programs whose distribution conditions are incompatible with these, write to the author to ask for permission. For software which is copyrighted by the Free Software Foundation, write to the Free Software Foundation; we sometimes make exceptions for this. Our decision will be guided by the two goals of preserving the free status of all derivatives of our free software and of promoting the sharing and reuse of software generally.

NO WARRANTY

15. BECAUSE THE LIBRARY IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE LIBRARY, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE LIBRARY "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE LIBRARY IS WITH YOU. SHOULD THE LIBRARY PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

16. IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE LIBRARY AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE LIBRARY (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE LIBRARY TO OPERATE WITH ANY OTHER SOFTWARE), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

END OF TERMS AND CONDITIONS

How to Apply These Terms to Your New Libraries

If you develop a new library, and you want it to be of the greatest possible use to the public, we recommend making it free software that everyone can redistribute and change. You can do so by permitting redistribution under these terms (or, alternatively, under the terms of the ordinary General Public License).

```
  To apply these terms, attach the following notices to the library.  It is
safest to attach them to the start of each source file to most effectively
convey the exclusion of warranty; and each file should have at least the
"copyright" line and a pointer to where the full notice is found.

    <one line to give the library's name and a brief idea of what it does.>
    Copyright (C) <year>  <name of author>

    This library is free software; you can redistribute it and/or
    modify it under the terms of the GNU Lesser General Public
    License as published by the Free Software Foundation; either
    version 2.1 of the License, or (at your option) any later version.

    This library is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the GNU
    Lesser General Public License for more details.

    You should have received a copy of the GNU Lesser General Public
    License along with this library; if not, write to the Free Software
    Foundation, Inc., 51 Franklin Street, Fifth Floor, Boston, MA  02110-1301  USA

Also add information on how to contact you by electronic and paper mail.

You should also get your employer (if you work as a programmer) or your
school, if any, to sign a "copyright disclaimer" for the library, if
necessary.  Here is a sample; alter the names:

  Yoyodyne, Inc., hereby disclaims all copyright interest in the
  library `Frob' (a library for tweaking knobs) written by James Random Hacker.

  <signature of Ty Coon>, 1 April 1990
  Ty Coon, President of Vice

That's all there is to it!
------------------------------------------------------------------------
xz/COPYING
------------------------------------------------------------------------

XZ Utils Licensing
==================

    Different licenses apply to different files in this package. Here
    is a rough summary of which licenses apply to which parts of this
    package (but check the individual files to be sure!):

      - liblzma is in the public domain.

      - xz, xzdec, and lzmadec command line tools are in the public
        domain unless GNU getopt_long had to be compiled and linked
        in from the lib directory. The getopt_long code is under
        GNU LGPLv2.1+.

      - The scripts to grep, diff, and view compressed files have been
        adapted from gzip. These scripts and their documentation are
        under GNU GPLv2+.

      - All the documentation in the doc directory and most of the
        XZ Utils specific documentation files in other directories
```

```
        are in the public domain.

      - Translated messages are in the public domain.

      - The build system contains public domain files, and files that
        are under GNU GPLv2+ or GNU GPLv3+. None of these files end up
        in the binaries being built.

      - Test files and test code in the tests directory, and debugging
        utilities in the debug directory are in the public domain.

      - The extra directory may contain public domain files, and files
        that are under various free software licenses.

    You can do whatever you want with the files that have been put into
    the public domain. If you find public domain legally problematic,
    take the previous sentence as a license grant. If you still find
    the lack of copyright legally problematic, you have too many
    lawyers.

    As usual, this software is provided "as is", without any warranty.

    If you copy significant amounts of public domain code from XZ Utils
    into your project, acknowledging this somewhere in your software is
    polite (especially if it is proprietary, non-free software), but
    naturally it is not legally required. Here is an example of a good
    notice to put into "about box" or into documentation:

        This software includes code from XZ Utils <http://tukaani.org/xz/>.

    The following license texts are included in the following files:
      - COPYING.LGPLv2.1: GNU Lesser General Public License version 2.1
      - COPYING.GPLv2: GNU General Public License version 2
      - COPYING.GPLv3: GNU General Public License version 3

    Note that the toolchain (compiler, linker etc.) may add some code
    pieces that are copyrighted. Thus, it is possible that e.g. liblzma
    binary wouldn't actually be in the public domain in its entirety
    even though it contains no copyrighted code from the XZ Utils source
    package.

    If you have questions, don't hesitate to ask the author(s) for more
    information.

------------------------------------------------------------------
xz/COPYING.GPLv3
------------------------------------------------------------------
                    GNU GENERAL PUBLIC LICENSE
                       Version 3, 29 June 2007

 Copyright (C) 2007 Free Software Foundation, Inc. <http://fsf.org/>
 Everyone is permitted to copy and distribute verbatim copies
 of this license document, but changing it is not allowed.

                            Preamble

  The GNU General Public License is a free, copyleft license for
software and other kinds of works.
```

The licenses for most software and other practical works are designed to take away your freedom to share and change the works. By contrast, the GNU General Public License is intended to guarantee your freedom to share and change all versions of a program--to make sure it remains free software for all its users. We, the Free Software Foundation, use the GNU General Public License for most of our software; it applies also to any other work released this way by its authors. You can apply it to your programs, too.

When we speak of free software, we are referring to freedom, not price. Our General Public Licenses are designed to make sure that you have the freedom to distribute copies of free software (and charge for them if you wish), that you receive source code or can get it if you want it, that you can change the software or use pieces of it in new free programs, and that you know you can do these things.

To protect your rights, we need to prevent others from denying you these rights or asking you to surrender the rights. Therefore, you have certain responsibilities if you distribute copies of the software, or if you modify it: responsibilities to respect the freedom of others.

For example, if you distribute copies of such a program, whether gratis or for a fee, you must pass on to the recipients the same freedoms that you received. You must make sure that they, too, receive or can get the source code. And you must show them these terms so they know their rights.

Developers that use the GNU GPL protect your rights with two steps: (1) assert copyright on the software, and (2) offer you this License giving you legal permission to copy, distribute and/or modify it.

For the developers' and authors' protection, the GPL clearly explains that there is no warranty for this free software. For both users' and authors' sake, the GPL requires that modified versions be marked as changed, so that their problems will not be attributed erroneously to authors of previous versions.

Some devices are designed to deny users access to install or run modified versions of the software inside them, although the manufacturer can do so. This is fundamentally incompatible with the aim of protecting users' freedom to change the software. The systematic pattern of such abuse occurs in the area of products for individuals to use, which is precisely where it is most unacceptable. Therefore, we have designed this version of the GPL to prohibit the practice for those products. If such problems arise substantially in other domains, we stand ready to extend this provision to those domains in future versions of the GPL, as needed to protect the freedom of users.

Finally, every program is threatened constantly by software patents. States should not allow patents to restrict development and use of software on general-purpose computers, but in those that do, we wish to avoid the special danger that patents applied to a free program could make it effectively proprietary. To prevent this, the GPL assures that patents cannot be used to render the program non-free.

The precise terms and conditions for copying, distribution and modification follow.

TERMS AND CONDITIONS

```
  0. Definitions.

  "This License" refers to version 3 of the GNU General Public License.

  "Copyright" also means copyright-like laws that apply to other kinds of
works, such as semiconductor masks.

  "The Program" refers to any copyrightable work licensed under this
License.  Each licensee is addressed as "you".  "Licensees" and
"recipients" may be individuals or organizations.

  To "modify" a work means to copy from or adapt all or part of the work
in a fashion requiring copyright permission, other than the making of an
exact copy.  The resulting work is called a "modified version" of the
earlier work or a work "based on" the earlier work.

  A "covered work" means either the unmodified Program or a work based
on the Program.

  To "propagate" a work means to do anything with it that, without
permission, would make you directly or secondarily liable for
infringement under applicable copyright law, except executing it on a
computer or modifying a private copy.  Propagation includes copying,
distribution (with or without modification), making available to the
public, and in some countries other activities as well.

  To "convey" a work means any kind of propagation that enables other
parties to make or receive copies.  Mere interaction with a user through
a computer network, with no transfer of a copy, is not conveying.

  An interactive user interface displays "Appropriate Legal Notices"
to the extent that it includes a convenient and prominently visible
feature that (1) displays an appropriate copyright notice, and (2)
tells the user that there is no warranty for the work (except to the
extent that warranties are provided), that licensees may convey the
work under this License, and how to view a copy of this License.  If
the interface presents a list of user commands or options, such as a
menu, a prominent item in the list meets this criterion.

  1. Source Code.

  The "source code" for a work means the preferred form of the work
for making modifications to it.  "Object code" means any non-source
form of a work.

  A "Standard Interface" means an interface that either is an official
standard defined by a recognized standards body, or, in the case of
interfaces specified for a particular programming language, one that
is widely used among developers working in that language.

  The "System Libraries" of an executable work include anything, other
than the work as a whole, that (a) is included in the normal form of
packaging a Major Component, but which is not part of that Major
Component, and (b) serves only to enable use of the work with that
Major Component, or to implement a Standard Interface for which an
implementation is available to the public in source code form.  A
"Major Component", in this context, means a major essential component
(kernel, window system, and so on) of the specific operating system
```

(if any) on which the executable work runs, or a compiler used to
produce the work, or an object code interpreter used to run it.

  The "Corresponding Source" for a work in object code form means all
the source code needed to generate, install, and (for an executable
work) run the object code and to modify the work, including scripts to
control those activities. However, it does not include the work's
System Libraries, or general-purpose tools or generally available free
programs which are used unmodified in performing those activities but
which are not part of the work. For example, Corresponding Source
includes interface definition files associated with source files for
the work, and the source code for shared libraries and dynamically
linked subprograms that the work is specifically designed to require,
such as by intimate data communication or control flow between those
subprograms and other parts of the work.

  The Corresponding Source need not include anything that users
can regenerate automatically from other parts of the Corresponding
Source.

  The Corresponding Source for a work in source code form is that
same work.

  2. Basic Permissions.

  All rights granted under this License are granted for the term of
copyright on the Program, and are irrevocable provided the stated
conditions are met. This License explicitly affirms your unlimited
permission to run the unmodified Program. The output from running a
covered work is covered by this License only if the output, given its
content, constitutes a covered work. This License acknowledges your
rights of fair use or other equivalent, as provided by copyright law.

  You may make, run and propagate covered works that you do not
convey, without conditions so long as your license otherwise remains
in force. You may convey covered works to others for the sole purpose
of having them make modifications exclusively for you, or provide you
with facilities for running those works, provided that you comply with
the terms of this License in conveying all material for which you do
not control copyright. Those thus making or running the covered works
for you must do so exclusively on your behalf, under your direction
and control, on terms that prohibit them from making any copies of
your copyrighted material outside their relationship with you.

  Conveying under any other circumstances is permitted solely under
the conditions stated below. Sublicensing is not allowed; section 10
makes it unnecessary.

  3. Protecting Users' Legal Rights From Anti-Circumvention Law.

  No covered work shall be deemed part of an effective technological
measure under any applicable law fulfilling obligations under article
11 of the WIPO copyright treaty adopted on 20 December 1996, or
similar laws prohibiting or restricting circumvention of such
measures.

  When you convey a covered work, you waive any legal power to forbid
circumvention of technological measures to the extent such circumvention
is effected by exercising rights under this License with respect to

the covered work, and you disclaim any intention to limit operation or modification of the work as a means of enforcing, against the work's users, your or third parties' legal rights to forbid circumvention of technological measures.

  4. Conveying Verbatim Copies.

  You may convey verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice; keep intact all notices stating that this License and any non-permissive terms added in accord with section 7 apply to the code; keep intact all notices of the absence of any warranty; and give all recipients a copy of this License along with the Program.

  You may charge any price or no price for each copy that you convey, and you may offer support or warranty protection for a fee.

  5. Conveying Modified Source Versions.

  You may convey a work based on the Program, or the modifications to produce it from the Program, in the form of source code under the terms of section 4, provided that you also meet all of these conditions:

    a) The work must carry prominent notices stating that you modified it, and giving a relevant date.

    b) The work must carry prominent notices stating that it is released under this License and any conditions added under section 7. This requirement modifies the requirement in section 4 to "keep intact all notices".

    c) You must license the entire work, as a whole, under this License to anyone who comes into possession of a copy. This License will therefore apply, along with any applicable section 7 additional terms, to the whole of the work, and all its parts, regardless of how they are packaged. This License gives no permission to license the work in any other way, but it does not invalidate such permission if you have separately received it.

    d) If the work has interactive user interfaces, each must display Appropriate Legal Notices; however, if the Program has interactive interfaces that do not display Appropriate Legal Notices, your work need not make them do so.

  A compilation of a covered work with other separate and independent works, which are not by their nature extensions of the covered work, and which are not combined with it such as to form a larger program, in or on a volume of a storage or distribution medium, is called an "aggregate" if the compilation and its resulting copyright are not used to limit the access or legal rights of the compilation's users beyond what the individual works permit. Inclusion of a covered work in an aggregate does not cause this License to apply to the other parts of the aggregate.

  6. Conveying Non-Source Forms.

  You may convey a covered work in object code form under the terms of sections 4 and 5, provided that you also convey the

machine-readable Corresponding Source under the terms of this License,
in one of these ways:

    a) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by the
    Corresponding Source fixed on a durable physical medium
    customarily used for software interchange.

    b) Convey the object code in, or embodied in, a physical product
    (including a physical distribution medium), accompanied by a
    written offer, valid for at least three years and valid for as
    long as you offer spare parts or customer support for that product
    model, to give anyone who possesses the object code either (1) a
    copy of the Corresponding Source for all the software in the
    product that is covered by this License, on a durable physical
    medium customarily used for software interchange, for a price no
    more than your reasonable cost of physically performing this
    conveying of source, or (2) access to copy the
    Corresponding Source from a network server at no charge.

    c) Convey individual copies of the object code with a copy of the
    written offer to provide the Corresponding Source. This
    alternative is allowed only occasionally and noncommercially, and
    only if you received the object code with such an offer, in accord
    with subsection 6b.

    d) Convey the object code by offering access from a designated
    place (gratis or for a charge), and offer equivalent access to the
    Corresponding Source in the same way through the same place at no
    further charge. You need not require recipients to copy the
    Corresponding Source along with the object code. If the place to
    copy the object code is a network server, the Corresponding Source
    may be on a different server (operated by you or a third party)
    that supports equivalent copying facilities, provided you maintain
    clear directions next to the object code saying where to find the
    Corresponding Source. Regardless of what server hosts the
    Corresponding Source, you remain obligated to ensure that it is
    available for as long as needed to satisfy these requirements.

    e) Convey the object code using peer-to-peer transmission, provided
    you inform other peers where the object code and Corresponding
    Source of the work are being offered to the general public at no
    charge under subsection 6d.

  A separable portion of the object code, whose source code is excluded
from the Corresponding Source as a System Library, need not be
included in conveying the object code work.

  A "User Product" is either (1) a "consumer product", which means any
tangible personal property which is normally used for personal, family,
or household purposes, or (2) anything designed or sold for incorporation
into a dwelling. In determining whether a product is a consumer product,
doubtful cases shall be resolved in favor of coverage. For a particular
product received by a particular user, "normally used" refers to a
typical or common use of that class of product, regardless of the status
of the particular user or of the way in which the particular user
actually uses, or expects or is expected to use, the product. A product
is a consumer product regardless of whether the product has substantial
commercial, industrial or non-consumer uses, unless such uses represent

the only significant mode of use of the product.

  "Installation Information" for a User Product means any methods, procedures, authorization keys, or other information required to install and execute modified versions of a covered work in that User Product from a modified version of its Corresponding Source. The information must suffice to ensure that the continued functioning of the modified object code is in no case prevented or interfered with solely because modification has been made.

  If you convey an object code work under this section in, or with, or specifically for use in, a User Product, and the conveying occurs as part of a transaction in which the right of possession and use of the User Product is transferred to the recipient in perpetuity or for a fixed term (regardless of how the transaction is characterized), the Corresponding Source conveyed under this section must be accompanied by the Installation Information. But this requirement does not apply if neither you nor any third party retains the ability to install modified object code on the User Product (for example, the work has been installed in ROM).

  The requirement to provide Installation Information does not include a requirement to continue to provide support service, warranty, or updates for a work that has been modified or installed by the recipient, or for the User Product in which it has been modified or installed. Access to a network may be denied when the modification itself materially and adversely affects the operation of the network or violates the rules and protocols for communication across the network.

  Corresponding Source conveyed, and Installation Information provided, in accord with this section must be in a format that is publicly documented (and with an implementation available to the public in source code form), and must require no special password or key for unpacking, reading or copying.

  7. Additional Terms.

  "Additional permissions" are terms that supplement the terms of this License by making exceptions from one or more of its conditions. Additional permissions that are applicable to the entire Program shall be treated as though they were included in this License, to the extent that they are valid under applicable law. If additional permissions apply only to part of the Program, that part may be used separately under those permissions, but the entire Program remains governed by this License without regard to the additional permissions.

  When you convey a copy of a covered work, you may at your option remove any additional permissions from that copy, or from any part of it. (Additional permissions may be written to require their own removal in certain cases when you modify the work.) You may place additional permissions on material, added by you to a covered work, for which you have or can give appropriate copyright permission.

  Notwithstanding any other provision of this License, for material you add to a covered work, you may (if authorized by the copyright holders of that material) supplement the terms of this License with terms:

    a) Disclaiming warranty or limiting liability differently from the terms of sections 15 and 16 of this License; or

b) Requiring preservation of specified reasonable legal notices or author attributions in that material or in the Appropriate Legal Notices displayed by works containing it; or

c) Prohibiting misrepresentation of the origin of that material, or requiring that modified versions of such material be marked in reasonable ways as different from the original version; or

d) Limiting the use for publicity purposes of names of licensors or authors of the material; or

e) Declining to grant rights under trademark law for use of some trade names, trademarks, or service marks; or

f) Requiring indemnification of licensors and authors of that material by anyone who conveys the material (or modified versions of it) with contractual assumptions of liability to the recipient, for any liability that these contractual assumptions directly impose on those licensors and authors.

All other non-permissive additional terms are considered "further restrictions" within the meaning of section 10. If the Program as you received it, or any part of it, contains a notice stating that it is governed by this License along with a term that is a further restriction, you may remove that term. If a license document contains a further restriction but permits relicensing or conveying under this License, you may add to a covered work material governed by the terms of that license document, provided that the further restriction does not survive such relicensing or conveying.

If you add terms to a covered work in accord with this section, you must place, in the relevant source files, a statement of the additional terms that apply to those files, or a notice indicating where to find the applicable terms.

Additional terms, permissive or non-permissive, may be stated in the form of a separately written license, or stated as exceptions; the above requirements apply either way.

8. Termination.

You may not propagate or modify a covered work except as expressly provided under this License. Any attempt otherwise to propagate or modify it is void, and will automatically terminate your rights under this License (including any patent licenses granted under the third paragraph of section 11).

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that

```
copyright holder, and you cure the violation prior to 30 days after
your receipt of the notice.

  Termination of your rights under this section does not terminate the
licenses of parties who have received copies or rights from you under
this License.  If your rights have been terminated and not permanently
reinstated, you do not qualify to receive new licenses for the same
material under section 10.

  9. Acceptance Not Required for Having Copies.

  You are not required to accept this License in order to receive or
run a copy of the Program.  Ancillary propagation of a covered work
occurring solely as a consequence of using peer-to-peer transmission
to receive a copy likewise does not require acceptance.  However,
nothing other than this License grants you permission to propagate or
modify any covered work.  These actions infringe copyright if you do
not accept this License.  Therefore, by modifying or propagating a
covered work, you indicate your acceptance of this License to do so.

  10. Automatic Licensing of Downstream Recipients.

  Each time you convey a covered work, the recipient automatically
receives a license from the original licensors, to run, modify and
propagate that work, subject to this License.  You are not responsible
for enforcing compliance by third parties with this License.

  An "entity transaction" is a transaction transferring control of an
organization, or substantially all assets of one, or subdividing an
organization, or merging organizations.  If propagation of a covered
work results from an entity transaction, each party to that
transaction who receives a copy of the work also receives whatever
licenses to the work the party's predecessor in interest had or could
give under the previous paragraph, plus a right to possession of the
Corresponding Source of the work from the predecessor in interest, if
the predecessor has it or can get it with reasonable efforts.

  You may not impose any further restrictions on the exercise of the
rights granted or affirmed under this License.  For example, you may
not impose a license fee, royalty, or other charge for exercise of
rights granted under this License, and you may not initiate litigation
(including a cross-claim or counterclaim in a lawsuit) alleging that
any patent claim is infringed by making, using, selling, offering for
sale, or importing the Program or any portion of it.

  11. Patents.

  A "contributor" is a copyright holder who authorizes use under this
License of the Program or a work on which the Program is based.  The
work thus licensed is called the contributor's "contributor version".

  A contributor's "essential patent claims" are all patent claims
owned or controlled by the contributor, whether already acquired or
hereafter acquired, that would be infringed by some manner, permitted
by this License, of making, using, or selling its contributor version,
but do not include claims that would be infringed only as a
consequence of further modification of the contributor version.  For
purposes of this definition, "control" includes the right to grant
patent sublicenses in a manner consistent with the requirements of
```

this License.

  Each contributor grants you a non-exclusive, worldwide, royalty-free patent license under the contributor's essential patent claims, to make, use, sell, offer for sale, import and otherwise run, modify and propagate the contents of its contributor version.

  In the following three paragraphs, a "patent license" is any express agreement or commitment, however denominated, not to enforce a patent (such as an express permission to practice a patent or covenant not to sue for patent infringement). To "grant" such a patent license to a party means to make such an agreement or commitment not to enforce a patent against the party.

  If you convey a covered work, knowingly relying on a patent license, and the Corresponding Source of the work is not available for anyone to copy, free of charge and under the terms of this License, through a publicly available network server or other readily accessible means, then you must either (1) cause the Corresponding Source to be so available, or (2) arrange to deprive yourself of the benefit of the patent license for this particular work, or (3) arrange, in a manner consistent with the requirements of this License, to extend the patent license to downstream recipients. "Knowingly relying" means you have actual knowledge that, but for the patent license, your conveying the covered work in a country, or your recipient's use of the covered work in a country, would infringe one or more identifiable patents in that country that you have reason to believe are valid.

  If, pursuant to or in connection with a single transaction or arrangement, you convey, or propagate by procuring conveyance of, a covered work, and grant a patent license to some of the parties receiving the covered work authorizing them to use, propagate, modify or convey a specific copy of the covered work, then the patent license you grant is automatically extended to all recipients of the covered work and works based on it.

  A patent license is "discriminatory" if it does not include within the scope of its coverage, prohibits the exercise of, or is conditioned on the non-exercise of one or more of the rights that are specifically granted under this License. You may not convey a covered work if you are a party to an arrangement with a third party that is in the business of distributing software, under which you make payment to the third party based on the extent of your activity of conveying the work, and under which the third party grants, to any of the parties who would receive the covered work from you, a discriminatory patent license (a) in connection with copies of the covered work conveyed by you (or copies made from those copies), or (b) primarily for and in connection with specific products or compilations that contain the covered work, unless you entered into that arrangement, or that patent license was granted, prior to 28 March 2007.

  Nothing in this License shall be construed as excluding or limiting any implied license or other defenses to infringement that may otherwise be available to you under applicable patent law.

  12. No Surrender of Others' Freedom.

  If conditions are imposed on you (whether by court order, agreement or otherwise) that contradict the conditions of this License, they do not

excuse you from the conditions of this License. If you cannot convey a covered work so as to satisfy simultaneously your obligations under this License and any other pertinent obligations, then as a consequence you may not convey it at all. For example, if you agree to terms that obligate you to collect a royalty for further conveying from those to whom you convey the Program, the only way you could satisfy both those terms and this License would be to refrain entirely from conveying the Program.

  13. Use with the GNU Affero General Public License.

  Notwithstanding any other provision of this License, you have permission to link or combine any covered work with a work licensed under version 3 of the GNU Affero General Public License into a single combined work, and to convey the resulting work. The terms of this License will continue to apply to the part which is the covered work, but the special requirements of the GNU Affero General Public License, section 13, concerning interaction through a network will apply to the combination as such.

  14. Revised Versions of this License.

  The Free Software Foundation may publish revised and/or new versions of the GNU General Public License from time to time. Such new versions will be similar in spirit to the present version, but may differ in detail to address new problems or concerns.

  Each version is given a distinguishing version number. If the Program specifies that a certain numbered version of the GNU General Public License "or any later version" applies to it, you have the option of following the terms and conditions either of that numbered version or of any later version published by the Free Software Foundation. If the Program does not specify a version number of the GNU General Public License, you may choose any version ever published by the Free Software Foundation.

  If the Program specifies that a proxy can decide which future versions of the GNU General Public License can be used, that proxy's public statement of acceptance of a version permanently authorizes you to choose that version for the Program.

  Later license versions may give you additional or different permissions. However, no additional obligations are imposed on any author or copyright holder as a result of your choosing to follow a later version.

  15. Disclaimer of Warranty.

  THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

  16. Limitation of Liability.

  IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING

WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MODIFIES AND/OR CONVEYS
THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY
GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE
USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF
DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD
PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS),
EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF
SUCH DAMAGES.

  17. Interpretation of Sections 15 and 16.

  If the disclaimer of warranty and limitation of liability provided
above cannot be given local legal effect according to their terms,
reviewing courts shall apply local law that most closely approximates
an absolute waiver of all civil liability in connection with the
Program, unless a warranty or assumption of liability accompanies a
copy of the Program in return for a fee.

                     END OF TERMS AND CONDITIONS

            How to Apply These Terms to Your New Programs

  If you develop a new program, and you want it to be of the greatest
possible use to the public, the best way to achieve this is to make it
free software which everyone can redistribute and change under these terms.

  To do so, attach the following notices to the program. It is safest
to attach them to the start of each source file to most effectively
state the exclusion of warranty; and each file should have at least
the "copyright" line and a pointer to where the full notice is found.

    <one line to give the program's name and a brief idea of what it does.>
    Copyright (C) <year> <name of author>

    This program is free software: you can redistribute it and/or modify
    it under the terms of the GNU General Public License as published by
    the Free Software Foundation, either version 3 of the License, or
    (at your option) any later version.

    This program is distributed in the hope that it will be useful,
    but WITHOUT ANY WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the
    GNU General Public License for more details.

    You should have received a copy of the GNU General Public License
    along with this program. If not, see <http://www.gnu.org/licenses/>.

Also add information on how to contact you by electronic and paper mail.

  If the program does terminal interaction, make it output a short
notice like this when it starts in an interactive mode:

    <program> Copyright (C) <year> <name of author>
    This program comes with ABSOLUTELY NO WARRANTY; for details type `show w'.
    This is free software, and you are welcome to redistribute it
    under certain conditions; type `show c' for details.

The hypothetical commands `show w' and `show c' should show the appropriate
parts of the General Public License. Of course, your program's commands

```
might be different; for a GUI interface, you would use an "about box".

  You should also get your employer (if you work as a programmer) or school,
if any, to sign a "copyright disclaimer" for the program, if necessary.
For more information on this, and how to apply and follow the GNU GPL, see
<http://www.gnu.org/licenses/>.

  The GNU General Public License does not permit incorporating your program
into proprietary programs.  If your program is a subroutine library, you
may consider it more useful to permit linking proprietary applications with
the library.  If this is what you want to do, use the GNU Lesser General
Public License instead of this License.  But first, please read
<http://www.gnu.org/philosophy/why-not-lgpl.html>.
```

3.95 zlib

```
zlib
--------------------------------------------------------------------
zlib/contrib/dotzlib/LICENSE_1_0.txt
--------------------------------------------------------------------
Boost Software License - Version 1.0 - August 17th, 2003

Permission is hereby granted, free of charge, to any person or organization
obtaining a copy of the software and accompanying documentation covered by
this license (the "Software") to use, reproduce, display, distribute,
execute, and transmit the Software, and to prepare derivative works of the
Software, and to permit third-parties to whom the Software is furnished to
do so, all subject to the following:

The copyright notices in the Software and this entire statement, including
the above license grant, this restriction and the following disclaimer,
must be included in all copies of the Software, in whole or in part, and
all derivative works of the Software, unless such copies or derivative
works are solely in the form of machine-executable object code generated by
a source language processor.

THE SOFTWARE IS PROVIDED "AS IS", WITHOUT WARRANTY OF ANY KIND, EXPRESS OR
IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY,
FITNESS FOR A PARTICULAR PURPOSE, TITLE AND NON-INFRINGEMENT. IN NO EVENT
SHALL THE COPYRIGHT HOLDERS OR ANYONE DISTRIBUTING THE SOFTWARE BE LIABLE
FOR ANY DAMAGES OR OTHER LIABILITY, WHETHER IN CONTRACT, TORT OR OTHERWISE,
ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER
DEALINGS IN THE SOFTWARE.
```

Contact

Utimaco IS GmbH
Germanusstraße 4
D - 52080 Aachen
Germany

phone +49 241 1696 - 200
fax +49 241 1696 - 199

web http://hsm.utimaco.com
email support-cs@utimaco.com