gzip

The data compression program
Edition 1.2.4, for Gzip Version 1.2.4
July 1993

by Jean-loup Gailly

Copyright © 1992-1993 Jean-loup Gailly

Permission is granted to make and distribute verbatim copies of this manual provided the copyright notice and this permission notice are preserved on all copies.

Permission is granted to copy and distribute modified versions of this manual under the conditions for verbatim copying, provided that the entire resulting derived work is distributed under the terms of a permission notice identical to this one.

Permission is granted to copy and distribute translations of this manual into another language, under the above conditions for modified versions, except that this permission notice may be stated in a translation approved by the Foundation.

GNU GENERAL PUBLIC LICENSE

Version 2, June 1991

Copyright © 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.

TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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.

10. 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.

11. 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

12. 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.
13. 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) 19*yy* *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) 19*yy* *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.

1 Overview

`gzip` reduces the size of the named files using Lempel-Ziv coding (LZ77). Whenever possible, each file is replaced by one with the extension '`.gz`', while keeping the same ownership modes, access and modification times. (The default extension is '`-gz`' for VMS, '`z`' for MSDOS, OS/2 FAT and Atari.) If no files are specified or if a file name is "-", the standard input is compressed to the standard output. `gzip` will only attempt to compress regular files. In particular, it will ignore symbolic links.

If the new file name is too long for its file system, `gzip` truncates it. `gzip` attempts to truncate only the parts of the file name longer than 3 characters. (A part is delimited by dots.) If the name consists of small parts only, the longest parts are truncated. For example, if file names are limited to 14 characters, gzip.msdos.exe is compressed to gzi.msd.exe.gz. Names are not truncated on systems which do not have a limit on file name length.

By default, `gzip` keeps the original file name and timestamp in the compressed file. These are used when decompressing the file with the '`-N`' option. This is useful when the compressed file name was truncated or when the time stamp was not preserved after a file transfer.

Compressed files can be restored to their original form using '`gzip -d`' or `gunzip` or `zcat`. If the original name saved in the compressed file is not suitable for its file system, a new name is constructed from the original one to make it legal.

`gunzip` takes a list of files on its command line and replaces each file whose name ends with '`.gz`', '`.z`', '`.Z`', '`-gz`', '`-z`' or '`_z`' and which begins with the correct magic number with an uncompressed file without the original extension. `gunzip` also recognizes the special extensions '`.tgz`' and '`.taz`' as shorthands for '`.tar.gz`' and '`.tar.Z`' respectively. When compressing, `gzip` uses the '`.tgz`' extension if necessary instead of truncating a file with a '`.tar`' extension.

`gunzip` can currently decompress files created by `gzip`, `zip`, `compress` or `pack`. The detection of the input format is automatic. When using the first two formats, `gunzip` checks a 32 bit CRC (cyclic redundancy check). For `pack`, `gunzip` checks the uncompressed length. The `compress` format was not designed to allow consistency checks. However `gunzip` is sometimes able to detect a bad '`.Z`' file. If you get an error when uncompressing a '`.Z`' file, do not assume that the '`.Z`' file is correct simply because the standard `uncompress` does not complain. This generally means that the standard `uncompress` does not check its input, and happily generates garbage output. The SCO '`compress -H`' format (`lzh` compression method) does not include a CRC but also allows some consistency checks.

Files created by `zip` can be uncompressed by `gzip` only if they have a single member compressed with the 'deflation' method. This feature is only intended to help conversion of `tar.zip` files to the `tar.gz` format. To extract `zip` files with several members, use `unzip` instead of `gunzip`.

`zcat` is identical to '`gunzip -c`'. `zcat` uncompresses either a list of files on the command line or its standard input and writes the uncompressed data on standard output. `zcat` will uncompress files that have the correct magic number whether they have a '`.gz`' suffix or not.

`gzip` uses the Lempel-Ziv algorithm used in `zip` and PKZIP. The amount of compression obtained depends on the size of the input and the distribution of common substrings. Typ-

ically, text such as source code or English is reduced by 60-70%. Compression is generally much better than that achieved by LZW (as used in `compress`), Huffman coding (as used in `pack`), or adaptive Huffman coding (`compact`).

Compression is always performed, even if the compressed file is slightly larger than the original. The worst case expansion is a few bytes for the `gzip` file header, plus 5 bytes every 32K block, or an expansion ratio of 0.015% for large files. Note that the actual number of used disk blocks almost never increases. `gzip` preserves the mode, ownership and timestamps of files when compressing or decompressing.

2 Sample Output

Here are some realistic examples of running `gzip`.

This is the output of the command '`gzip -h`':

```
gzip 1.2.4 (18 Aug 93)
usage: gzip [-cdfhlLnNrtvV19] [-S suffix] [file ...]
 -c --stdout      write on standard output, keep original files unchanged
 -d --decompress  decompress
 -f --force       force overwrite of output file and compress links
 -h --help        give this help
 -l --list        list compressed file contents
 -L --license     display software license
 -n --no-name     do not save or restore the original name and time stamp
 -N --name        save or restore the original name and time stamp
 -q --quiet       suppress all warnings
 -r --recursive   operate recursively on directories
 -S .suf  --suffix .suf     use suffix .suf on compressed files
 -t --test        test compressed file integrity
 -v --verbose     verbose mode
 -V --version     display version number
 -1 --fast        compress faster
 -9 --best        compress better
 file...          files to (de)compress. If none given, use standard input.
```

This is the output of the command '`gzip -v texinfo.tex`':

```
texinfo.tex:             71.6% -- replaced with texinfo.tex.gz
```

The following command will find all `gzip` files in the current directory and subdirectories, and extract them in place without destroying the original:

```
find . -name '*.gz' -print | sed 's/^\(.*\)[.]gz$/gunzip < "&" > "\1"/' | sh
```

3 Invoking gzip

The format for running the `gzip` program is:

`gzip` *option* ...

`gzip` supports the following options:

‘`--stdout`’
‘`--to-stdout`’
‘`-c`’ Write output on standard output; keep original files unchanged. If there are several input files, the output consists of a sequence of independently compressed members. To obtain better compression, concatenate all input files before compressing them.

‘`--decompress`’
‘`--uncompress`’
‘`-d`’ Decompress.

‘`--force`’
‘`-f`’ Force compression or decompression even if the file has multiple links or the corresponding file already exists, or if the compressed data is read from or written to a terminal. If the input data is not in a format recognized by `gzip`, and if the option –stdout is also given, copy the input data without change to the standard ouput: let `zcat` behave as `cat`. If ‘`-f`’ is not given, and when not running in the background, `gzip` prompts to verify whether an existing file should be overwritten.

‘`--help`’
‘`-h`’ Print an informative help message describing the options then quit.

‘`--list`’
‘`-l`’ For each compressed file, list the following fields:

```
compressed size: size of the compressed file
uncompressed size: size of the uncompressed file
ratio: compression ratio (0.0% if unknown)
uncompressed_name: name of the uncompressed file
```

The uncompressed size is given as ‘`-1`’ for files not in `gzip` format, such as compressed ‘`.Z`’ files. To get the uncompressed size for such a file, you can use:

```
zcat file.Z | wc -c
```

In combination with the –verbose option, the following fields are also displayed:

```
method: compression method (deflate,compress,lzh,pack)
crc: the 32-bit CRC of the uncompressed data
date & time: time stamp for the uncompressed file
```

The crc is given as ffffffff for a file not in gzip format.

With –verbose, the size totals and compression ratio for all files is also displayed, unless some sizes are unknown. With –quiet, the title and totals lines are not displayed.

‘`--license`’
‘`-L`’ Display the `gzip` license then quit.

'`--no-name`'
'`-n`' When compressing, do not save the original file name and time stamp by default. (The original name is always saved if the name had to be truncated.) When decompressing, do not restore the original file name if present (remove only the `gzip` suffix from the compressed file name) and do not restore the original time stamp if present (copy it from the compressed file). This option is the default when decompressing.

'`--name`'
'`-N`' When compressing, always save the original file name and time stamp; this is the default. When decompressing, restore the original file name and time stamp if present. This option is useful on systems which have a limit on file name length or when the time stamp has been lost after a file transfer.

'`--quiet`'
'`-q`' Suppress all warning messages.

'`--recursive`'
'`-r`' Travel the directory structure recursively. If any of the file names specified on the command line are directories, `gzip` will descend into the directory and compress all the files it finds there (or decompress them in the case of `gunzip`).

'`--suffix` *suf*'
'`-S` *suf*' Use suffix '*suf*' instead of '`.gz`'. Any suffix can be given, but suffixes other than '`.z`' and '`.gz`' should be avoided to avoid confusion when files are transferred to other systems. A null suffix forces gunzip to try decompression on all given files regardless of suffix, as in:

```
gunzip -S "" *        (*.* for MSDOS)
```

Previous versions of gzip used the '`.z`' suffix. This was changed to avoid a conflict with `pack`.

'`--test`'
'`-t`' Test. Check the compressed file integrity.

'`--verbose`'
'`-v`' Verbose. Display the name and percentage reduction for each file compressed.

'`--version`'
'`-V`' Version. Display the version number and compilation options, then quit.

'`--fast`'
'`--best`'
'`-`*n*' Regulate the speed of compression using the specified digit *n*, where '`-1`' or '`--fast`' indicates the fastest compression method (less compression) and '`--best`' or '`-9`' indicates the slowest compression method (optimal compression). The default compression level is '`-6`' (that is, biased towards high compression at expense of speed).

4 Advanced usage

Multiple compressed files can be concatenated. In this case, `gunzip` will extract all members at once. If one member is damaged, other members might still be recovered after removal of the damaged member. Better compression can be usually obtained if all members are decompressed and then recompressed in a single step.

This is an example of concatenating `gzip` files:

```
gzip -c file1  > foo.gz
gzip -c file2 >> foo.gz
```

Then

```
gunzip -c foo
```

is equivalent to

```
cat file1 file2
```

In case of damage to one member of a '`.gz`' file, other members can still be recovered (if the damaged member is removed). However, you can get better compression by compressing all members at once:

```
cat file1 file2 | gzip > foo.gz
```

compresses better than

```
gzip -c file1 file2 > foo.gz
```

If you want to recompress concatenated files to get better compression, do:

```
zcat old.gz | gzip > new.gz
```

If a compressed file consists of several members, the uncompressed size and CRC reported by the '`--list`' option applies to the last member only. If you need the uncompressed size for all members, you can use:

```
zcat file.gz | wc -c
```

If you wish to create a single archive file with multiple members so that members can later be extracted independently, use an archiver such as `tar` or `zip`. GNU `tar` supports the '`-z`' option to invoke `gzip` transparently. `gzip` is designed as a complement to `tar`, not as a replacement.

5 Environment

The environment variable `GZIP` can hold a set of default options for `gzip`. These options are interpreted first and can be overwritten by explicit command line parameters. For example:

```
for sh:    GZIP="-8v --name"; export GZIP
for csh:   setenv GZIP "-8v --name"
for MSDOS: set GZIP=-8v --name
```

On Vax/VMS, the name of the environment variable is `GZIP_OPT`, to avoid a conflict with the symbol set for invocation of the program.

6 Using gzip on tapes

When writing compressed data to a tape, it is generally necessary to pad the output with zeroes up to a block boundary. When the data is read and the whole block is passed to `gunzip` for decompression, `gunzip` detects that there is extra trailing garbage after the compressed data and emits a warning by default. You have to use the '`--quiet`' option to suppress the warning. This option can be set in the `GZIP` environment variable, as in:

```
for sh:    GZIP="-q"  tar -xfz --block-compress /dev/rst0
for csh:   (setenv GZIP "-q"; tar -xfz --block-compress /dev/rst0)
```

In the above example, `gzip` is invoked implicitly by the '`-z`' option of GNU `tar`. Make sure that the same block size ('`-b`' option of `tar`) is used for reading and writing compressed data on tapes. (This example assumes you are using the GNU version of `tar`.)

7 Reporting Bugs

If you find a bug in `gzip`, please send electronic mail to '`jloup@chorus.fr`' or, if this fails, to '`bug-gnu-utils@prep.ai.mit.edu`'. Include the version number, which you can find by running '`gzip -V`'. Also include in your message the hardware and operating system, the compiler used to compile `gzip`, a description of the bug behavior, and the input to `gzip` that triggered the bug.

Concept Index

B

bugs 21

C

concatenated files 15

E

Environment 17

I

invoking 13

O

options 13
overview 9

S

sample 11

T

tapes 19

Table of Contents

GNU GENERAL PUBLIC LICENSE 1

Preamble 1
TERMS AND CONDITIONS FOR COPYING, DISTRIBUTION AND MODIFICATION 2
How to Apply These Terms to Your New Programs 6

1 Overview 9

2 Sample Output 11

3 Invoking `gzip` 13

4 Advanced usage 15

5 Environment 17

6 Using `gzip` on tapes 19

7 Reporting Bugs 21

Concept Index 23